

**E. B. Eddy Paper, Inc. response to
U. S. EPA Clean Air Act Section 114(a)
Request for Information**

June 13, 2000



E.B. EDDY PAPER

June 13, 2000

E. B. Eddy Paper, Inc.

1700 Washington Avenue
P.O. Box 5003
Port Huron, MI 48061-5003

tel 810 982 0191
fax 810 982 7124

Silvia Palomo
Office of Chemical Emergency and
Preparedness Prevention (SC-6J)
U. S. Environmental Protection Agency
Region 5
77 West Jackson Boulevard
Chicago, Illinois 60604

Dear Ms. Palomo,

Enclosed you will find E.B. Eddy Paper, Incorporated response to the U.S. EPA Clean Air Act Section 114(a), request for information. Thank you again for the permission of the 15 day extension as we had discussed on May 25th.

As you will see we do have any chemicals on site that meet the minimum threshold for submitting a RMP.

If you have any questions, please feel free to contact me at 810-982-0191.

Sincerely,

Christine J. Lupu, CHMM
Environmental Engineer

Enc.

**E. B. Eddy Paper, Inc. response to
U. S. EPA Clean Air Act Section 114(a)
Request for Information**

June 13, 2000

Question 1:

Does E. B. Eddy Paper, Incorporated have any of the regulated substances listed in Appendix B in a process? Process is defined at 40 C.F.R. Part 68 to mean "any activity involving a regulated substance including any use, storage, manufacturing, handling, or on-site movement of such substances or combination of these activities."

- Yes

Question 2:

If E. B. Eddy Paper, Incorporated has a regulated substance, provide the following information:

- (a) The chemical name and the CAS# of each regulated substance in the process.
- (b) The quantity of the substance(s) involved in each activity (i.e. use, storage, manufacturing, handling, or combinations of these activities).
- (c) If the substance(s) is a mixture, provide the concentration by percent weight of each component in the mixture, and the amount of the mixture.
- (d) The capacity of each reactor, tank, drum, barrel cylinder, vat, kettle, boiler, pipe, hose, or other container which stores or handles the substance(s) in each activity.
- (e) A copy of the Material Safety Data Sheet (MSDS) for each substance(s).

1. Acetaldehyde CAS 75-7-0

It is contained in one item on site at 0.0006%. Since the regulated substance is in a mixture and its concentration is below 1% than the amount of the substance need not be considered when determining more than the threshold quantity at a stationary source per 40 C.F.R. Part 68.115 (b) (1). The MSDS is located in tab 1.

2. Acetylene CAS 74-86-2

This is on site used as a fuel only. This is considered exempt per Pages 13243-13250 in the Federal Register March 13, 2000 (Volume 65, Number 49) The MSDS's are located in tab 2.

3. Butane CAS 106-97-8

Butane is part of the mixture of 2 spray paints on site. It is 15% of the mixture in each paint. The MSDS's are located in tab 3.

Max on site:

Green Marking paint: 18 oz can that weighs 510.3 grams 6 cans are in the storeroom. Mixture contains 15% butane. Therefore:

$$\text{Lbs of butane} = 510.3 \text{ g} \times 6 \text{ cans} \times 0.15 \times (2.205 \times 10^{-3}) = 1.01 \text{ lb}$$

Yellow Marking paint: 18 oz can, weight = 510.3 grams. 107 cans in storeroom.
12 cans in rest of facility. Mixture contains 15% butane. Therefore:

$$\text{Lbs of butane} = 510.3 \text{ g} \times 129 \text{ cans} \times 0.15 \times (2.205 \times 10^{-3}) = 21.77 \text{ lbs}$$

Total = 22.78 lbs

4. Chlorine CAS 7782-50-5

It is contained in one item on site at 0.0006%. Since the regulated substance is in a mixture and its concentration is below 1% than the amount of the substance need not be considered when determining more than the threshold quantity at a stationary source per 40 C.F.R. Part 68.115 (b) (1).

It is contained in a second product that is a laundry bleach. This item is considered exempt per 40 C.F.R. Part 68.115 (b) (4) (iii). The MSDS's are located in tab 4.

5. Cyclohexylamine CAS 108-97-8

It is contained in one item on site at 0.5%. Since the regulated substance is in a mixture and its concentration is below 1% than the amount of the substance need not be considered when determining more than the threshold quantity at a stationary source per 40 C.F.R. Part 68.115 (b) (1). The MSDS is located in tab 5.

6. Epichlorohydrin CAS 106-89-8

It is contained in two items on site at 0.01% and .000005% respectively. Since the regulated substance is in a mixture and its concentration is below 1% than the amount of the substance need not be considered when determining more than the threshold quantity at a stationary source per 40 C.F.R. Part 68.115 (b) (1). The MSDS's are located in tab 6.

7. Ethane CAS 74-84-0

This is a component of propane and used as a fuel only. This is considered exempt per Pages 13243-13250 in the Federal Register March 13, 2000 (Volume 65, Number 49) The MSDS is located in tab 7.

8. Ethylene oxide CAS 75-21-8

It is contained in one item on site at 0.0005%. Since the regulated substance is in a mixture and its concentration is below 1% than the amount of the substance need not be considered when determining more than the

threshold quantity at a stationary source per 40 C.F.R. Part 68.115 (b) (1). The MSDS is located in tab 8.

9. Formaldehyde CAS 50-0-0

It is contained in six items on site at concentrations between 0.0004% and .05% Since the regulated substance is in a mixture and its concentration is below 1% than the amount of the substance need not be considered when determining more than the threshold quantity at a stationary source per 40 C.F.R. Part 68.115 (b) (1). The MSDS's are located in tab 9.

10. Hydrochloric Acid CAS 7647-1-0

This product is only used in the lab and therefore is exempt per 40 C.F.R. Part 68.115 (b) (5). The MSDS is located in tab 10.

11. Isobutane CAS 75-28-5

Isobutane is a component of propane and used as a fuel only. This is considered exempt per Pages 13243-13250 in the Federal Register March 13, 2000 (Volume 65, Number 49). Also Isobutane is contained in items used for routine janitorial maintenance. These items are considered exempt per 40 C.F.R. Part 68.115 (b) (4) (ii).

Six other chemicals on site contain isobutane in their mixture between 13 and 30%. The MSDS's are located in tab 11.

Max on site:

3M Super Spray Adhesive: 16.5 oz can that weighs 467 grams 48 cans are in the storeroom and 12 cans are in the facility. Mixture contains 13% isobutane.

Therefore:

$$\text{Lbs of isobutane} = 467 \text{ g} \times 60 \text{ cans} \times 0.13 \times (2.205 \times 10^{-3}) = 8.03 \text{ lb}$$

Tekusolve: 11 oz can that weighs 325 grams. Max of 60 cans in the storeroom and 12 throughout facility. Mixture contains 20 % isobutane. Therefore:

$$\text{Lbs of isobutane} = 325 \text{ g} \times 72 \text{ cans} \times 0.20 \times (2.205 \times 10^{-3}) = 10.32 \text{ lb}$$

Chain & Wire Rope Lube Aerosol: 10 oz can that weighs 284 grams. Max of 12 cans in storeroom and 1 can in the facility. Mixture contains 20% isobutane.

Therefore:

$$\text{Lbs of isobutane} = 284 \text{ g} \times 13 \text{ cans} \times 0.2 \times (2.205 \times 10^{-3}) = 1.63 \text{ lb}$$

Cutting oil: 12 oz can that weighs 340 grams. Max of 12 cans in the storeroom and 1 can in the facility. Mixture contains 13% isobutane. Therefore:

$$\text{Lbs of isobutane} = 340 \text{ g} \times 13 \text{ cans} \times 0.13 \times (2.205 \times 10^{-3}) = 1.27 \text{ lb}$$

White Lithium grease aerosol: 10 oz can that weighs 284 grams. Max of 15 in storeroom and 3 cans in facility. Mixture contains 20% isobutane. Therefore:

$$\text{Lbs of isobutane} = 284 \text{ g} \times 18 \text{ cans} \times 0.20 \times (2.205 \times 10^{-3}) = 2.25 \text{ lb}$$

Nickel Anti Seize: 13 oz can that weighs 368 grams. Max of 8 cans in the storeroom and 1 can in the facility. Mixture contains 30 % isobutane. Therefore:

$$\text{Lbs of isobutane} = 368 \text{ g} \times 8 \text{ cans} \times 0.30 \times (2.205 \times 10^{-3}) = 1.95 \text{ lb}$$

Total on site: 25.45 lbs

12. Propane CAS 74-98-6

Propane is on site used as a fuel. This is considered exempt per Pages 13243-13250 in the Federal Register March 13, 2000 (Volume 65, Number 49). Also Propane is contained in items used for routine janitorial maintenance. These items are considered exempt per 40 C.F.R. Part 68.115 (b) (4) (ii).

Nine other chemicals on site contain propane in their mixture between 13 and 30%. The MSDS's are located in tab 12.

Max on site:

3M Super Spray Adhesive: 16.5 oz can that weighs 467 grams 48 cans are in the storeroom and 12 cans are in the facility. Mixture contains 13% propane.

Therefore:

$$\text{Lbs of propane} = 467 \text{ g} \times 60 \text{ cans} \times 0.13 \times (2.205 \times 10^{-3}) = 8.03 \text{ lb}$$

Tekusolve: 11 oz can that weighs 325 grams. Max of 60 cans in the storeroom and 12 throughout facility. Mixture contains 20% propane. Therefore:

$$\text{Lbs of propane} = 325 \text{ g} \times 72 \text{ cans} \times 0.20 \times (2.205 \times 10^{-3}) = 10.32 \text{ lb}$$

Chain & Wire Rope Lube Aerosol: 10 oz can that weighs 284 grams. Max of 12 cans in storeroom and 1 can in the facility. Mixture contains 20% propane.

Therefore:

$$\text{Lbs of propane} = 284 \text{ g} \times 13 \text{ cans} \times 0.2 \times (2.205 \times 10^{-3}) = 1.63 \text{ lb}$$

Cutting oil: 12 oz can that weighs 340 grams. Max of 12 cans in the storeroom and 1 can in the facility. Mixture contains 13% propane. Therefore:

$$\text{Lbs of propane} = 340 \text{ g} \times 13 \text{ cans} \times 0.13 \times (2.205 \times 10^{-3}) = 1.27 \text{ lb}$$

White Lithium grease aerosol: 10 oz can that weighs 284 grams. Max of 15 in storeroom and 3 cans in facility. Mixture contains 20% propane. Therefore:

$$\text{Lbs of propane} = 284 \text{ g} \times 18 \text{ cans} \times 0.20 \times (2.205 \times 10^{-3}) = 2.25 \text{ lb}$$

Nickel Anti Seize: 13 oz can that weighs 368 grams. Max of 8 cans in the storeroom and 1 can in the facility. Mixture contains 30% propane. Therefore:

$$\text{Lbs of propane} = 368 \text{ g} \times 8 \text{ cans} \times 0.30 \times (2.205 \times 10^{-3}) = 1.95 \text{ lb}$$

Spray and go - all colors: 12 oz can that weighs 340 grams. Max of 101 cans in the storeroom and 12 cans in the facility. Mixture contains 20% propane.

Therefore:

$$\text{Lbs of propane} = 340 \text{ g} \times 113 \text{ cans} \times 0.20 \times (2.205 \times 10^{-3}) = 16.94 \text{ lb}$$

Spray and go - aluminum: 12 oz can that weighs 340 grams. Max of 12 cans in the storeroom and 2 cans in the facility. Mixture contains 20% propane.

Therefore:

$$\text{Lbs of propane} = 340 \text{ g} \times 16 \text{ cans} \times 0.20 \times (2.205 \times 10^{-3}) = 2.40 \text{ lb}$$

Green Marking paint: 18 oz can that weighs 510.3 grams 6 cans are in the storeroom. Mixture contains 15% propane. Therefore:

$$\text{Lbs of propane} = 510.3 \text{ g} \times 6 \text{ cans} \times 0.15 \times (2.205 \times 10^{-3}) = 1.01 \text{ lb}$$

Yellow Marking paint: 18 oz can, weighs 510.3 grams. 107 cans in storeroom. 12 cans in rest of facility. Mixture contains 15% propane. Therefore:

$$\text{Lbs of propane} = 510.3 \text{ g} \times 129 \text{ cans} \times 0.15 \times (2.205 \times 10^{-3}) = 21.77 \text{ lbs}$$

Food Grade Silicone: 10 oz can that weighs 284 grams. Max of 24 in storeroom and 6 cans in facility. Mixture contains 20% propane. Therefore:

$$\text{Lbs of propane} = 284 \text{ g} \times 30 \text{ cans} \times 0.20 \times (2.205 \times 10^{-3}) = 3.76 \text{ lb}$$

Total on site: 71.33 lbs

13. Propylene CAS 115-7-1

This is a component of propane and used as a fuel only. This is considered exempt per Pages 13243-13250 in the Federal Register March 13, 2000 (Volume 65, Number 49) The MSDS is located in tab 13.

Question 3:

Describe the method or source of information you used in calculating the quantity of the substance(s) in your answer to question 2. Also, provide copies of any documentation or inventory records used in your calculation.

- To determine maximum amounts on site, I used concentrations by percent weight from the MSDS for each substance and storeroom inventory records. The MSDS's and the storeroom inventory for each item is located in each RMP chemical tab.

Question 4:

Did E. B. Eddy Paper, Incorporated submit to U.S. EPA a Risk Management Plan (RMP) as required in 40 C.F.R. Part 68? If so, provide the date when you submitted the plan and the assigned RMP Identification Number.

- E. B. Eddy Paper, Inc. did not submit an RMP.

Question 5:

If E. B. Eddy Paper, Incorporated determined that the regulations at 40 C.F.R. Part 68 do not apply to it, provide the basis for this determination.

Based on the calculations in Question 2, we do not have any chemicals on site that meet the minimum threshold for submitting a plan.

<u>RMP Chemical</u>	<u>Threshold</u>	<u>Max on site</u>
Butane	10,000 lbs	22.78 lbs
Isobutane	10,000 lbs	25.45 lbs
Propane	10,000 lbs	71.33 lbs

Question 6:

How many people does E. B. Eddy Paper, Incorporated employ?

- As of June 13, 2000, E. B. Eddy Paper, Inc. employs 323 people.

TAB INDEX

<u>TAB</u>	<u>RMP Chemical</u>
1	Acetaldehyde
2	Acetylene
3	Butane
4	Chlorine
5	Cyclohexylamine
6	Epichlorohydrin
7	Ethane
8	Ethylene Oxide
9	Formaldehyde
10	Hydrochloric Acid
11	Isobutane
12	Propane
13	Propylene

MSDS's

Acetaldehyde



MATERIAL SAFETY DATA SHEET

EFFECTIVE DATE 07/12/94

Union Carbide urges each customer or recipient of this MSDS to study it carefully to become aware of and understand the hazards associated with the product. The reader should consider consulting reference works or individuals who are experts in ventilation, toxicology, and fire prevention, as necessary or appropriate to use and understand the data contained in this MSDS.

To promote safe handling, each customer or recipient should: (1) notify its employees, agents, contractors and others whom it knows or believes will use this material or the information in this MSDS and any other information regarding hazards or safety; (2) furnish this same information to each of its customers for the product; and (3) request its customers to notify their employees, customers, and other users of the product of this information.

I. IDENTIFICATION

PRODUCT NAME: CAREWAX SENTRY POLYETHYLENE GLYCOL 1450 NF, FCC GRADE OR 1450 FLAKE NF, FCC GRADE

CHEMICAL NAME: Polyethylene Glycol

Date ☒ New ☐ Revised

CHEMICAL FAMILY: Oxyalkylene Polymer

☒ Technical ☐ Maintenance
☐ Power Plant ☐ WWTP
☒ Lab ☒ #7 Office
☒ #5/6 Office ☐ #8 Office ☒ Main Gate
☒ Material Prep ☒ Stores ☐ Roll Wrap

FORMULA: HO-(CH₂CH₂O)_n-H

MOLECULAR WEIGHT: 1305-1535

SYNONYMS: Polyoxethylene 1450

CAS # AND NAME: See Section III, "Ingredients"

II. PHYSICAL DATA(Determined on Typical Material)

BOILING POINT, 760 mm Hg: >200 C (>392 F)

SPECIFIC GRAVITY(H₂O = 1): =1.102 at 55/20 C

FREEZING POINT: 47 C (117 F)

VAPOR PRESSURE AT 20°C: <0.01 mmHg

Copyright 1994, Union Carbide

CARBOWAX and SENTRY are Trademarks of Union Carbide

EMERGENCY PHONE NUMBERS: 1-800-UCC-HELP (NUMBER AVAILABLE AT ALL TIMES) OR (304) 744-3457

UNION CARBIDE CHEMICALS AND PLASTICS COMPANY INC
Industrial Chemicals Division
39 Old Ridgebury Road, Danbury, CT 06817-0001

EVAPORATION RATE (Butyl Acetate = 1): <0.01

VAPOR DENSITY (AIR = 1): >10

SOLUBILITY IN WATER by wt: 70% at 20 C

APPEARANCE: Transparent colorless
Above freezing point
White
Below freezing point

ODOR: Mild

PHYSICAL STATE: Liquid above freezing point
Solid below freezing point

III. INGREDIENTS

<u>%</u>	<u>MATERIAL</u>	<u>CAS#</u>	<u>EXPOSURE LIMIT</u>
100	Polyethylene Glycol	25322-68-3	None established

IV. FIRE AND EXPLOSION HAZARD DATA

FLASH POINT(test method(s)): 385 F (196 C)
Pensky-Martens Closed Cup ASTM D 93
500 F (260 C)
Cleveland Open Cup ASTM D 92

FLAMMABLE LIMITS IN AIR
% by volume: LOWER: Not Determined
UPPER: Not Determined

SPECIAL FIRE FIGHTING
PROCEDURES: Do not direct a solid stream of water or foam into hot, burning pools; this
may cause frothing and increase fire intensity.
Use self-contained breathing apparatus and protective clothing.

EXTINGUISHING MEDIA: Apply alcohol-type or all-purpose-type foam by manufacturer's recommended
techniques for large fires. Use carbon dioxide or dry chemical media for
small fires.

UNUSUAL FIRE AND
EXPLOSION HAZARDS:

See "Other Precautions" in Section IX.

V. HEALTH HAZARD DATA

EXPOSURE LIMIT(S):

None established by OSHA or ACGIH.

EFFECTS OF SINGLE OVEREXPOSURE:

SWALLOWING:

No evidence of harmful effects from available information.

SKIN ABSORPTION:

No evidence of harmful effects from available information.

INHALATION:

Short-term harmful health effects are not expected from vapor generated at ambient temperature.

SKIN CONTACT:

No evidence of harmful effects from available information.

EYE CONTACT:

No evidence of harmful effects from available information.

EFFECTS OF REPEATED OVEREXPOSURE:

Although this material is not a skin irritant, submersion by workers of unprotected skin in highly concentrated solutions of this material for prolonged periods of time could result in skin dehydration.

MEDICAL CONDITIONS AGGRAVATED BY OVEREXPOSURE:

A knowledge of the available toxicology information and of the physical and chemical properties of the material suggests that overexposure is unlikely to aggravate existing medical conditions.

SIGNIFICANT LABORATORY DATA WITH POSSIBLE RELEVANCE TO HUMAN
HEALTH HAZARD EVALUATION:

None currently known.

OTHER EFFECTS OF OVEREXPOSURE:

Overexposure to vapor generated at high temperatures may result in eye and respiratory tract irritation, dizziness, nausea and the inhalation of harmful amounts of material.

EMERGENCY AND FIRST AID PROCEDURES:

SWALLOWING:

No emergency care anticipated.

SKIN:

Wash skin with soap and water.

INHALATION:

No emergency care anticipated.

EYES:

Flush eyes thoroughly with water for several minutes. Remove contact lenses, if worn.

NOTES TO PHYSICIAN:

Toxicology studies have shown this or similar material to be of very low acute toxicity and nonirritating. There is no specific antidote. Treatment of overexposure should be directed at the control of symptoms and the clinical condition of the patient.

VI. REACTIVITY DATA

STABILITY: Stable

CONDITIONS TO AVOID: None known.

INCOMPATIBILITY (materials to avoid):

Normally unreactive; however, avoid strong bases at high temperatures, strong acids, strong oxidizing agents and materials reactive with hydroxyl compounds.

HAZARDOUS COMBUSTION OR DECOMPOSITION PRODUCTS:

Burning can produce the following products:

Carbon monoxide and/or carbon dioxide.

Carbon monoxide is highly toxic if inhaled; carbon dioxide in sufficient concentrations can act as an asphyxiant.

HAZARDOUS POLYMERIZATION: Will Not Occur

CONDITIONS TO AVOID: None known.

VII. SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED:

Collect for disposal.

WASTE DISPOSAL METHOD:

Incinerate in a furnace where permitted under Federal, State, and local regulations.

See Section IX, "Other Precautions."

VIII. SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION (specify type):

None should normally be necessary. If personnel experience respiratory discomfort or irritation, NIOSH approved half-mask respirator equipped with organic vapor cartridge and dust/mist pre-filter recommended.

VENTILATION:

General (mechanical) room ventilation is expected to be satisfactory.

PROTECTIVE GLOVES:

PVC-coated

EYE PROTECTION:Safety Glasses or Monogoggles

ER PROTECTIVE EQUIPMENT:Eye Bath, Safety Shower

IX. SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE:**ATTENTION!**

USE PRODUCT PROMPTLY AFTER OPENING.

AVOID PROLONGED EXPOSURE TO HEAT AND AIR.

FOR INDUSTRY USE ONLY

OTHER PRECAUTIONS:

Biodegradation - This material is resistant to rapid biodegradation. For this reason, incineration is the preferred method of disposal. This product may contain trace amounts of ethylene oxide (CAS No. 75-21-8), a condition which creates the potential for accumulation of ethylene oxide in the head space of shipping and storage containers and in enclosed areas where the product is being handled or used. Ethylene Oxide is considered by OSHA, IARC, and NTP as a potential carcinogen for humans. OSHA considers that, at excess levels, ethylene oxide may present reproductive, mutagenic, genotoxic, neurologic and sensitization hazards in humans. If this product is handled with adequate ventilation, the presence of these trace amounts is not expected to result in any short or long term hazard.

This product may not be exempt for OSHA's ethylene oxide standard, 29CFR1910.1047. Users should comply with all applicable provisions. Personnel should be monitored to determine levels of exposure to ethylene oxide. If necessary, protective measures should be taken. The OSHA permissible exposure limit for ethylene oxide is 1 ppm TWAS, the action level is 0.5 ppm TWAS, the ACGIH TLV is 1 ppm TWAS and OSHA has established an excursion limit of 5 ppm (15 minute average).

PROCESS HAZARD: Sudden release of hot organic chemical vapors or mists from process equipment operating at elevated temperature and pressure, or sudden ingress of air into vacuum equipment, may result in ignitions without the presence of obvious ignition sources. Published "autoignition" or "ignition" temperature values cannot be treated as safe operating temperatures in chemical processes without analysis of the actual process conditions.

Any use of this product in elevated-temperature processes should be thoroughly evaluated to establish and maintain safe operating conditions. Further information is available in a technical bulletin entitled "Ignition Hazards of Organic Chemical Vapors."

X. REGULATORY INFORMATION

STATUS ON SUBSTANCE LISTS:

The concentrations shown are maximum or ceiling levels (weight %) to be used for calculations for regulations. Trade Secrets are indicated by "TS".

FEDERAL EPA

Comprehensive Environmental Response Compensation, and Liability Act of 1980 (CERCLA) requires notification of the National Response Center of release of quantities of Hazardous Substances equal to or greater than the reportable quantities (RQs) in 40 CFR 302.4.

Components present in this product at a level which could require reporting under the statute are:

*** NONE ***

Superfund Amendments and Reauthorization Act of 1986 (SARA) Title III requires emergency planning based on Threshold Planning Quantities (TPQs) and release reporting based on Reportable Quantities (RQs) in 40 CFR 355 (used for SARA 302, 304, 311 and 312).

Components present in this product at a level which could require reporting under the statute are:

*** NONE ***

Superfund Amendments and Reauthorization Act of 1986 (SARA) Title III requires submission of annual reports of release of toxic chemicals that appear in 40 CFR 372 (for SARA 313). This information must be included in all MSDSs that are copied and distributed for this material.

Components present in this product at a level which could require reporting under the statute are:

*** NONE ***

Toxic Substances Control Act (TSCA) STATUS:

The ingredients of this product are on the TSCA inventory.

STATE RIGHT-TO-KNOW

CALIFORNIA Proposition 65

This product contains trace levels of ACETALDEHYDE, DIOXANE AND FORMALDEHYDE which the State of California has found to cause cancer and ETHYLENE OXIDE which the State of California has found to cause cancer, birth defects or other reproductive harm.

MASSACHUSETTS Right-To-Know, Substance List (MSL) Hazardous Substances and Extraordinarily Hazardous Substances on the MSL must be identified when present in products.

Components present in this product at a level which could require reporting under the statute are:

EXTRAORDINARILY HAZARDOUS SUBSTANCES (\geq 0.0001%)

UPPER BOUND

CHEMICAL	CAS NUMBER	CONCENTRATION %
Acetaldehyde	75-07-0	.0006
Dioxane	123-91-1	.0005
Ethylene Oxide	75-21-8	.0005
Formaldehyde	50-00-0	.0004

PENNSYLVANIA Right-to-Know, Hazardous Substance List Hazardous Substances and Special Hazardous Substances on the List must be identified when present in products.

Components present in this product at a level which could require reporting under the statute are:

*** NONE ***

CALIFORNIA SCAQMD RULE 443.1 VOC'S:

Vapor Pressure at <0.01 mmHg at 20°C.

VOC 1 g/L

VOC 1 g/L less water and less exempted solvents

OTHER REGULATORY INFORMATION:

EPA Hazard Categories: NONE

NOTE —

The opinions expressed herein are those of qualified experts within Union Carbide. We believe that the information contained herein is current as of the date of this Material Safety Data Sheet. Since the use of this information and the conditions of the use of the product are not under the control of Union Carbide, it is the user's obligation to determine conditions of safe use of the product.

REVISED SECTIONS:

Revisions in this MSDS occurred in the following sections:

SECTION I - IDENTIFICATION
SECTION II - PHYSICAL DATA
SECTION IV - FIRE AND EXPLOSION
SECTION VI - REACTIVITY DATA
SECTION IX - SPECIAL PRECAUTIONS
SECTION X - REGULATORY INFORMATION

PRODUCT: 18289
F NUMBER: N0072D

MSDS's

Acetylene

Rec'd 8-26-91

MATERIAL SAFETY DATA SHEET



LIQUID CARBONIC

135 SOUTH LA SALLE STREET • CHICAGO, ILLINOIS 60603-4282
PHONE (312) 855-2500

ACETYLENE

DOT: UN 1001
HAZ. CL.: Flammable Gas
LABEL: Flammable Gas

Rev. December 1990

24 Hour Emergency Phone Numbers: (504) 673-8831; CHEMTREC (800) 424-9300

SECTION I--PRODUCT IDENTIFICATION

CHEMICAL NAME: Acetylene
COMMON NAME AND SYNONYMS: Ethyne, Ethine
CHEMICAL FAMILY: Alkyne FORMULA: C_2H_2

SECTION II--HAZARDOUS INGREDIENTS

MATERIAL	VOLUME %	CAS NO.	1990-1991 ACGIH TLV UNITS
Acetylene	99+	74-86-2	Simple Asphyxiant OSHA 1989 TWA = None Listed

SECTION III--PHYSICAL DATA

BOILING POINT (°F.): -118 (Subl. Pt.) SPECIFIC GRAVITY ($H_2O=1$): N/A (Gas)
VAPOR PRESSURE: @ 70°F = 645 psia % VOLATILE BY VOLUME: N/A (Gas)
VAPOR DENSITY (AIR=1): @ 70°F = .92 EVAPORATION RATE (BUTYL ACETATE=1): N/A (Gas)
SOLUBILITY IN WATER: Soluble
APPEARANCE AND ODOR: Colorless gas with garlic-like odor

SECTION IV--FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (METHOD USED): N/A (Gas) FLAMMABLE LIMITS: $\frac{LEL}{2.2}$ $\frac{UEL}{80-85}$
EXTINGUISHING MEDIA: Water, carbon dioxide, dry chemical
SPECIAL FIRE FIGHTING PROCEDURES: Stop flow of gas. Cool exposed containers with water spray. If possible, allow fire to burn itself out. Containers may rupture violently when heated by a fire. Vapors may travel a considerable distance to a source of ignition.
UNUSUAL FIRE AND EXPLOSION HAZARDS:
Acetylene decomposes above 30 psia in air if not dissolved in acetone. Metal fuse safety relief devices in the cylinders melt above 212°F releasing acetylene.
Acetylene may decompose violently when heated or shocked. Refer to CGA Bulletin SB-4 "Handling Acetylene Cylinders in Fire Situations."

SECTION V--HEALTH HAZARD DATA

Route(s) of Entry:	Inhalation?	Yes	Skin?	No	Ingestion?	No
Carcinogenicity:	NTP?	No	IARC Monographs?	No	OSHA?	No

EFFECTS OF OVEREXPOSURE: Inhalation: Moderate concentrations excluding an adequate air supply cause dizziness, drowsiness and eventual unconsciousness. May act as an anesthetic. Persons in ill health where such illness would be aggravated by exposure to acetylene should not be allowed to work with or handle this product.

EMERGENCY AND FIRST AID PROCEDURES: If Inhaled: Remove to fresh air. If unconscious or breathing is difficult, administer artificial respiration with supplemental oxygen. Keep warm and at rest. Caution when entering contaminated area due to fire and explosion hazard. Safely ventilate area to less than LEL concentration.

(Continued on Supplemental Sheet)

ACETYLENE**SECTION VI--REACTIVITY DATA**

STABILITY: UNSTABLE (x) STABLE ()

CONDITIONS TO AVOID: Undissolved gas dissociates above 30 psia. Can decompose violently when heated or shocked; even in the absence of air or oxygen.

INCOMPATIBILITY (MATERIALS TO AVOID): Oxidizers, halogens, copper, silver, mercury.

HAZARDOUS DECOMPOSITION PRODUCTS: Hydrogen

HAZARDOUS POLYMERIZATION: MAY OCCUR () WON'T OCCUR (x)

CONDITIONS TO AVOID: N/A

SECTION VII--SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:

Evacuate all personnel upwind and away from affected area. Stop leak if possible. Personnel involved in attempting to stop leak should use self-contained breathing apparatus. Eliminate sources of ignition. Supply maximum ventilation with explosion-proof equipment.

WASTE DISPOSAL METHOD:

Locate leaking containers in a remote downwind area outside and allow to vent to atmosphere. Incinerate gas by controlled burning in flare if possible. Follow federal, state or local regulations.

SECTION VIII--SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION: Self-contained breathing apparatus available in event of leak or spill.

VENTILATION: LOCAL EXHAUST (x) To prevent accumulation above the LEL.
MECHANICAL (GENERAL) (x)

PROTECTIVE GLOVES: PVC or rubber

EYE PROTECTION: Safety goggles or glasses

OTHER PROTECTIVE EQUIPMENT: Safety shoes, safety shower.

Use appropriate protective equipment when welding or cutting.

SECTION IX--SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING: Protect cylinders against physical damage. Store in cool, dry, well ventilated area, away from sources of heat and ignition and direct sunlight. Do not allow area where the cylinders are stored to exceed 125°F. Isolate from oxidizers such as oxygen, chlorine, and fluorine. Use a check valve or trap in acetylene discharge line to prevent hazardous backflow. Post "No Smoking or Open Flames" signs in storage or use area. Cylinders should be stored upright and firmly secured to prevent falling or being knocked over. Electrical equipment should be non-sparking or explosion proof.

OTHER PRECAUTIONS: To avoid dissociation, do not allow the undissolved (free) gas to exceed 30 psia. Use only DOT or ASME coded containers. Earth ground and bond all lines and equipment associated with the acetylene system. Use a pressure reducing regulator when connecting cylinder to lower pressure piping or systems. Close valve after each use and when empty. Acetylene cylinders must not be recharged except by or with consent of Liquid Carbonic. For more information refer to CGA Bulletin SB-2 "Oxygen Deficient Atmospheres" and CGA Pamphlet P-1 "Safe Handling of Compressed Gases in Containers" and NFPA Bulletin No. 58.

(Continued on Supplemental Sheet)

No guaranty is made as to the accuracy of any data or statement contained herein. While this material is furnished in good faith, NO WARRANTY EXPRESS OR IMPLIED, OF MERCHANTABILITY, FITNESS OR OTHERWISE IS MADE. This material is offered only for your consideration, investigation and verification and Liquid Carbonic shall not in any event be liable for special, incidental or consequential damages in connection with its publication.

SUPPLEMENTAL SHEET - ACETYLENE MATERIAL SAFETY DATA SHEET

SECTION V--HEALTH HAZARD DATA

EMERGENCY AND FIRST AID PROCEDURES: (Continued)

CAUTION: Welding or brazing may produce fumes and gases hazardous to health. Avoid breathing these fumes and gases. Use adequate ventilation. See ANSI Z-49.1 "Safety in Welding and Cutting" published by the American Welding Society and OSHA safety regulations under 29 CFR 19.10.252 "Welding, Cutting and Brazing." Also see ACGIH TLVs 1990-1991 Appendix B, Section B2, "Welding Fumes." ARC RAYS can injure eyes and burn skin.

SECTION IX--SPECIAL PRECAUTIONS

OTHER PRECAUTIONS: (Continued)

Consult manufacturer's MSDS sheet on welding consumables and related products for reactivity and health hazard data, and for further information regarding welding fumes.

NFPA 704 NO. for Acetylene = 1 4 3

No guaranty is made as to the accuracy of any data or statement contained herein. While this material is furnished in good faith, NO WARRANTY EXPRESS OR IMPLIED, OF MERCHANTABILITY, FITNESS OR OTHERWISE IS MADE. This material is offered only for your consideration, investigation and verification and Liquid Carbonic shall not in any event be liable for special, incidental or consequential damages in connection with its publication.

MATERIAL SAFETY DATA SHEET



An explanation of the terms used herein may be found in OSHA 29 CFR 1910.1200,
available from OSHA regional or area offices.
(Essentially similar to U.S. Department of Labor Form OSHA-20
and generally accepted in Canada for information purposes)
Do Not Duplicate This Form. Request an Original.



I. PRODUCT IDENTIFICATION

PRODUCT	Acetylene		
CHEMICAL NAME	Acetylene	SYNONYMS	Acetylen, Ethine, Ethyne, Narcylene
FORMULA	C ₂ H ₂	CHEMICAL FAMILY	Alkyne
		MOLECULAR WEIGHT	26.038
TRADE NAME	Acetylene (This product is intended for welding and cutting use.)		

II. HAZARDOUS INGREDIENTS

This section covers the materials from which this product is manufactured. The fumes and gases produced during welding and cutting with the normal use of this product are covered by Section VI. The term "hazardous" should be interpreted as a term required and defined in OSHA 29 CFR 1910.1200 and does not necessarily imply the existence of any hazard.

MATERIAL (CAS NO.)	Vol (%)	1984-1985 ACGIH TLV-TWA (OSHA-PEL)
Acetylene (74-86-2)	100	Simple asphyxiant (None currently established)

III. PHYSICAL DATA

BOILING POINT, 760 mm. Hg	Not Applicable	SUBLIMATION POINT	-84°C (-119.2°F) @ 760mm Hg
SPECIFIC GRAVITY (H ₂ O = 1)	Not Applicable	VAPOR PRESSURE AT 21°C.	635 psig
VAPOR DENSITY (air = 1)	0.91	SOLUBILITY IN WATER, % by wt.	Slight
PERCENT VOLATILES BY VOLUME	100	EVAPORATION RATE (Butyl Acetate = 1)	Not Applicable
APPEARANCE AND ODOR Colorless gas at normal temperature and pressure; garlic-like odor.			

EMERGENCY PHONE NUMBER

IN CASE OF EMERGENCIES involving this material, further information is available at all times:
In the USA 304 — 744-3487 In Canada 514 — 645-5311
For routine information contact your local supplier

Union Carbide requests the users of this product to study this Material Safety Data Sheet (MSDS) and become aware of product hazards and safety information. To promote safe use of this product a user should (1) notify its employees, agents and contractors of the information on this MSDS and any product hazards and safety information, (2) furnish this same information to each of its customers for the product, and (3) request such customers to notify their employees and customers for the product of the same product hazards and safety information.

UNION CARBIDE CORPORATION : LINDE DIVISION
UNION CARBIDE CANADA LIMITED : LINDE DIVISION

IV. HEALTH HAZARD DATA

THRESHOLD LIMIT VALUE

The ACGIH 1984-85 recommended limit for welding fume, not otherwise classified (NOC), is 5mg/m³.

TLV-TWA's should be used as a guide in the control of health hazards and not as fine lines between safe and dangerous concentrations. See Section VI for specific fume constituents which may modify this TLV-TWA.

EFFECTS OF OVEREXPOSURE AND EMERGENCY AND FIRST AID PROCEDURES

working with welding and cutting may create one or more of the following health hazards:

FUMES AND GASES can be dangerous to your health and may cause serious lung disease.*

HEAT RAYS (*INFRARED RADIATION* from the flame or hot metal) can injure eyes.

NOISE can damage hearing.

Acetylene is an asphyxiant. Moderate concentrations may cause headache, drowsiness, dizziness and unconsciousness. Lack of oxygen can cause death. Keep your head out of the fumes. Do not breathe fumes and gases caused by the process. Use enough ventilation, local exhaust, or both to keep fumes and gases from your breathing zone and the general area. The type and amount of fumes and gases depend on the equipment and supplies used. Possibly dangerous materials may be found in fluxes, coatings, gases, and metals. Get a Material Safety Data Sheet (MSDS) for every material used. Air samples can be used to find out what respiratory protection is needed.

Wear correct ear, eye, and body protection.

Short term overexposure to fumes may result in discomfort such as dizziness, nausea, or dryness or irritation of nose, throat, or eyes.

MIXTURES: When two or more gases, or liquefied gases are mixed, their hazardous properties may combine to create additional, unexpected hazards. Obtain and evaluate the safety information for each component before you produce the mixture. Consult an Industrial Hygienist, or other trained person when you make your safety evaluation of the end product. Remember, gases and liquids have properties which can cause serious injury or death.

A detailed description of the Health Hazards and their consequences may be found in Linde's free safety booklet L-2035. You may obtain copies from your local supplier, or by writing to Union Carbide Corporation, Linde Division, Communications Department, 39 Old Ridgebury Road, Danbury, Connecticut, 06817-0001.

FIRST AID IN CASE OF EMERGENCY — Call for medical aid. Employ First Aid techniques recommended by the American Red Cross. IF BREATHING IS DIFFICULT give oxygen. Call a physician. IF NOT BREATHING, begin artificial respiration, preferably mouth-to-mouth. If no detectable pulse, begin external heart massage. Immediately call a physician. IN CASE OF EYE BURN call a physician.

*NOTES TO PHYSICIAN:

- Acute** — Gases, fumes, and dusts may cause irritation to the eyes, lungs, nose, and throat. Some toxic gases associated with welding and related processes may cause pulmonary edema, asphyxiation, and death. Acute overexposure may include signs and symptoms such as watery eyes, nose and throat irritation, headache, dizziness, difficulty breathing, frequent coughing, or chest pains.
- Chronic** — Protracted inhalation of air contaminants may lead to their accumulation in the lungs, a condition which may be seen as dense areas on chest x-rays. The severity of change is proportional to the length of exposure. The changes seen are not necessarily associated with symptoms or signs of reduced lung function or disease. In addition, the changes on x-rays may be caused by non-work related factors such as smoking, etc.

PRODUCT: Acetylene

L-4559-C

May 1985

V. FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (test method)	-17.8°C (0°F) T.C.C.	AUTOIGNITION TEMPERATURE	299°C (571°F)
------------------------------	----------------------	-----------------------------	---------------

FLAMMABLE LIMITS IN AIR, % by volume	LOWER	2.3%	UPPER	100%
---	-------	------	-------	------

EXTINGUISHING MEDIA

See paragraphs below.

SPECIAL FIRE FIGHTING PROCEDURES

Refer to CGA pamphlet SB-4, "Handling Acetylene Cylinders in Fire Situations."

Evacuate all personnel from danger area. Immediately cool containers with water spray from maximum distance taking care not to extinguish flames. Remove ignition sources if without risk. If flames are accidentally extinguished, explosive re-ignition may occur. Use self-contained breathing apparatus. Stop flow of gas if without risk while continuing cooling water spray. Remove all containers from area of fire if without risk. Allow fire to burn out. On-site fire brigades must comply with OSHA 29 CFR 1910.156.

UNUSUAL FIRE AND EXPLOSION HAZARDS

Extremely flammable gas. Forms explosive mixtures with air and oxidizing agents. Container may rupture due to heat of fire. Do not extinguish flames due to possibility of explosive re-ignition. Flammable vapors may spread from leak. Explosive atmospheres may linger. Before entering area, especially confined areas, check atmosphere with approved explosion meter. No part of a container should be subjected to a temperature higher than 52°C (approximately 125°F). All containers are provided with a pressure relief device designed to vent contents when they are exposed to elevated temperature. Contact with copper, silver, or mercury or their alloys or halogens can cause explosion.

VI. REACTIVITY DATA

STABILITY		CONDITIONS TO AVOID Stable as shipped. Avoid use at pressures above 15 psig.
UNSTABLE	STABLE	
X		

INCOMPATIBILITY (materials to avoid)

Copper, silver, mercury or their alloys, oxidizing agents, acids, halogens, moisture.

HAZARDOUS DECOMPOSITION PRODUCTS

Thermal decomposition or burning may produce CO/CO₂/H₂. The welding and cutting process may form reaction products such as carbon monoxide and carbon dioxide. Other decomposition products of normal operation originate from the volatilization, reaction or oxidation of the material being worked.

HAZARDOUS POLYMERIZATION		CONDITIONS TO AVOID Elevated temperature and pressure and/or the presence of a catalyst.
May Occur	Will not Occur	
X		

VII. SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED

Forms explosive mixtures with air (See Section V). Immediately evacuate all personnel from danger area. Use self-contained breathing apparatus where needed. Remove all sources of ignition if without risk. Reduce vapors with fog or fine water spray. Shut off leak if without risk. Ventilate area of leak or move leaking container to well-ventilated area. Flammable gas may spread from leak. Before entering area, especially confined areas, check atmosphere with appropriate device.

WASTE DISPOSAL METHOD Prevent waste from contaminating surrounding environment. Keep personnel away. Discard any product, residue, disposable container or liner in an environmentally acceptable manner, in full compliance with Federal, State and local regulations.

VIII. SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION (specify type) — Use respirable fume respirator or air supplied respirator when working in confined space or where local exhaust or ventilation does not keep exposure below TLV. Select as per OSHA29 CFR1910.134.

VENTILATION	LOCAL EXHAUST — Use enough ventilation, local exhaust or both, to keep the fumes and gases below TLV's in the worker's breathing zone and the general area. Train the worker to keep his head out of the fumes.	
	MECHANICAL (general)	ALWAYS WORK WITH ENOUGH VENTILATION
	SPECIAL	Not applicable
	OTHER Depends on specific use conditions, and location. Use adequate ventilation or personal respiratory protection. See Section IX and OSHA29 CFR1910.252.	

PROTECTIVE GLOVES Welding gloves recommended

EYE PROTECTION — Wear goggles with filter lens selected as per ANSI Z49.1. Provide protective screens and goggles, if necessary, to protect others. Select as per OSHA29 CFR1910.133.

OTHER PROTECTIVE EQUIPMENT — As needed, wear hand, head, and body protection which help to prevent injury from radiation, and sparks. See ANSI Z49.1. At a minimum this includes welder's gloves and protective goggles, and may include arm protectors, aprons, hats, shoulder protection, as well as substantial clothing. Train the worker not to touch live electrical parts.

IX. SPECIAL PRECAUTIONS

Fumes and gases cannot be classified simply. The composition and quantity of both are dependent upon the metal being worked, the process, procedure and electrodes used. Other conditions which also influence the composition and quantity of the fumes and gases to which workers may be exposed include: coatings on the metal being worked (such as paint, plating, or galvanizing), the number of workers and the volume of the work area, the quality and amount of ventilation, the position of the worker's head with respect to the fume plume, as well as the presence of contaminants in the atmosphere (such as chlorinated hydrocarbon vapors from cleaning and degreasing activities).

One recommended way to determine the composition and quantity of fumes and gases to which workers are exposed is to take an air sample from inside the worker's helmet if worn or in the worker's breathing zone. See ANSI/AWS F1.1, available from the American Welding Society, 550 N.W. Le Jeune Rd., Miami, FL 33126.

Read and understand the manufacturer's instructions and the precautionary label on the product. See American National Standard Z49.1, "Safety In Welding And Cutting" published by the American Welding Society and OSHA Publication 2206 (29CFR1910), U.S. Government Printing Office, Washington, D.C. 20402 for more details. For further safety and health information refer to Linde's free safety booklet L-2035.

OTHER HANDLING AND STORAGE CONDITIONS

Heat and sparks during use could be the source of ignition of combustible materials. Prevent fires.

Refer to NFPA 51B "Cutting and Welding Processes" and NFPA 50 "Oxygen-Fuel Gas Systems." Use piping and equipment adequately designed to withstand pressures to be encountered. Gas can cause rapid suffocation due to oxygen deficiency. Store and use with adequate ventilation. Close valve when not in use and when empty. Never work on a pressurized system.

The opinions expressed herein are those of qualified experts within Union Carbide. We believe that the information contained herein is current as of the date of this Material Safety Data Sheet. Since the use of this information and these opinions and the conditions of use of the product are not within the control of Union Carbide, it is the user's obligation to determine the conditions of safe use of the product.

**GENERAL OFFICES****IN THE USA:**

Union Carbide Corporation
Linde Division
39 Old Ridgebury Road
Danbury, CT 06817-0001

IN CANADA:

Union Carbide Canada Limited
Linde Division
123 Eglinton Avenue East
Toronto, Ontario M4P 1J3

Other offices in principal cities all over the world.

MSDS's

Butane

Ref: Q718msds.262

**MATERIAL SAFETY DATA
SHEET**

FOX VALLEY SYSTEMS, INC.
640 Industrial Drive
Cary, Illinois, U.S.A. 60013-1948

Prepared: July 17, 1989

EMERGENCY TELEPHONE: Call local poison control center

INFORMATION TELEPHONE: (312) 639-5744
*After November 10, 1989, Area Code is 708

**SECTION I: PRODUCT IDENTIFICATION
& HAZARDOUS INGREDIENTS**

NOTE: Only hazardous ingredients are listed. Shown as a % of the total weight of the contents of each product.

1. SUPER STRIPE ATHLETIC PAINT: White SSAM2
SUPER STRIPE TRAFFIC PAINT: White TW13, Gray TG1, Black TB1
SUPER SUPREME TRAFFIC PAINT: White STW1
Acetone 2-10%, Butane 10-15%, 2-Butoxyethanol 1-3%, Propane 10-15%, Toluene 10-20%, VM & P Naphtha 8-15%, Xylene 3-10%. Weight: 10-10.6 lbs./gal. For health hazard data see SECTION IV A, below.
2. SUPER STRIPE TRAFFIC PAINT: Red TRI
Acetone 2-10%, Butane 10-15%, 2-Butoxyethanol 1-3%, Propane 10-15%, Stoddard Solvent 1-5%, Toluene 10-20%, VM & P Naphtha 8-15%, Xylene 3-10%, Molybdate Orange 6-8%. Weight: 10-10.6 lbs./gal. For health hazard data see SECTION IV B, below.
3. SUPER SUPREME TRAFFIC PAINT: Yellow STY1
Acetone 2-10%, Butane 10-15%, 2-Butoxyethanol 1-3%, Propane 10-15%, Toluene 10-20%, VM & P Naphtha 8-15%, Xylene 3-10%, Lead Chromate 17-20%. Weight: 10-10.6 lbs./gal. For health hazard data see SECTION IV B, below.
4. TRIG-A-CAP MARKING PAINT: Red TACAPRI
EASY MARKER MARKING PAINT: Red MPAPRI
Butane 10-15%, 2-Butoxyethanol 2-5%, Propane 10-15%, Toluene 15-30%, VM & P Naphtha 5-12%, Xylene 3-10%, Molybdate Orange 5-7%. Weight: 8.5-9.5 lbs./gal. For health hazard data see SECTION IV B, below.
5. TRIG-A-CAP MARKING PAINT: White TACCW2
EASY MARKER MARKING PAINT: White MPCW2
Butane 10-15%, 2-Butoxyethanol 2-5%, Propane 10-15%, Toluene 15-30%, VM & P Naphtha 5-12%, Xylene 3-10%. Weight: 8.5-9.5 lbs./gal. For health hazard data see SECTION IV B, below.
6. TRIG-A-CAP MARKING PAINT: Aluminum TACRI
EASY MARKER MARKING PAINT: Aluminum MPRI
Aluminum 2-8%, Aromatic 100 1-1.5%, Butane 10-15%, Propane 10-15%, Stoddard Solvent 1-5%, Toluene 30-40%, Xylene 15-25%. Weight: 8-9 lbs./gal. For health hazard data see SECTION IV A, below.

7. STRIPE TRAFFIC PAINT: Yellow TY13
Acetone 2-10%, Butane 10-15%, 2-Butoxyethanol 1-3%, Propane 10-15%, Toluene 10-20%, VM & P Naphtha 8-15%, Xylene 3-10%, Lead Chromate 8-11%. Weight: 10-10.6 lbs./gal. For health hazard data see SECTION IV B, below.
8. SUPER STRIPE TRAFFIC PAINT: Blue TL1, Green TN1
Acetone 2-10%, Butane 10-15%, 2-Butoxyethanol 1-3%, Propane 10-15%, Stoddard Solvent 1-10%, Toluene 10-20%, VM & P Naphtha 8-15%, Xylene 3-10%. Weight: 10-10.6 lbs./gal. For health hazard data see SECTION IV A, below.
9. SUPER STRIPE ATHLETIC PAINT: Hot Orange SSAH1
TRIG-A-CAP MARKING PAINT: Hot Orange TACHO1, Brilliant Red Cerise TACBRI, Scarlet Red TACSRI, Blazing Red Orange TACBRO1, Nature Green TACNG1, Mauve TACMV1
EASY MARKER MARKING PAINT: Hot Orange MPH1, Brilliant Red Cerise MPBRI, Scarlet Red MPSRI, Blazing Red Orange MPBRO1, Nature Green MPNG1, Mauve MPW1
Aromatic 150 1-3%, Butane 10-20%, Propane 10-20%, Stoddard Solvent 6-10%, Toluene 10-15%, VM & P Naphtha 20-30%. Weight: 7.2-8 lbs./gal. For health hazard data see SECTION IV A, below.
10. TRIG-A-CAP MARKING PAINT: Blue TACEB1, Green TACAPG1
EASY MARKER MARKING PAINT: Blue MPEB1, Green MPAPG1
Butane 10-15%, 2-Butoxyethanol 2-5%, Propane 10-15%, Stoddard Solvent 3-10%, Toluene 15-30%, VM & P Naphtha 5-12%, Xylene 3-10%. Weight: 8.5-9.5 lbs./gal. For health hazard data see SECTION IV A, below.
11. TRIG-A-CAP MARKING PAINT: Brown TACBRIU
EASY MARKER MARKING PAINT: Brown MPBRIU
Butane 15-30%, 2-Butoxyethanol 3-8%, Propane 15-30%, Stoddard Solvent 3-8%, Toluene 15-30%, VM & P Naphtha 5-12%, Xylene 3-10%. Weight: 8.0-9.0 lbs./gal. For health hazard data see SECTION IV A, below.
12. TRIG-A-CAP MARKING CHALKS, FLUORESCENT: Hot Orange CHTHO1, Brilliant Red Cerise CHTBRI, Blazing Red Orange CHTBRO1
EASY MARKER MARKING CHALKS, FLUORESCENT: Hot Orange CHMHO1, Brilliant Red Cerise CHMBRI, Blazing Red Orange CHMBRO1
Acetone 40-60%, Butane 10-20%, Propane 10-20%, VM & P Naphtha 2-8%. Weight: 7.2-7.8 lbs./gal. For health hazard data see SECTION IV A, below.
13. SUPER STRIPE TRAFFIC PAINT, UNLEADED: Yellow TYIU, Orange TOIU, Red TRIU
TRIG-A-CAP MARKING PAINT, UNLEADED: Yellow TACYIU, Orange TACDIU, Red TACRIU
EASY MARKER MARKING PAINT UNLEADED: Yellow MPYIU, Orange MPOIU, Red MPRIU
Acetone 2-8%, Butane 10-20%, 2-Butoxyethanol 2-5%, Propane 10-20%, Toluene 10-20%, VM & P Naphtha 5-12%, Xylene 5-10%. Weight: 9-10 lbs./gal. For health hazard data see SECTION IV A, below.
14. SUPER STRIPE TRAFFIC PAINT: Orange TOI
Acetone 2-10%, Butane 10-15%, 2-Butoxyethanol 1-3%, Propane 10-15%, Toluene 10-20%, VM & P Naphtha 8-15%, Xylene 3-10%, Lead Chromate 1-3%, Molybdate Orange 1-2%. Weight: 10-10.6 lbs./gal. For health hazard data see SECTION IV B, below.
15. TRIG-A-CAP MARKING PAINT: Yellow TACRY1
EASY MARKER MARKING PAINT: Yellow MPY1
Butane 10-15%, 2-Butoxyethanol 2-5%, Propane 10-15%, Toluene 15-30%, VM & P Naphtha 5-12%, Xylene 3-10%, Lead Chromate 11-14%. Weight: 8.5-9.5 lbs./gal. For health hazard data see SECTION IV B, below.

THRESHOLD LIMIT VALUES

The following data is relevant to the individual ingredients only. At this time, data has not been established for the products themselves. Values are given in parts per million unless otherwise specified.

INGREDIENT	CAS No.	OSHA		ACGIH	
		TWA	STEL	TWA	STEL
Acetone	67-64-1	750	1000	750	1000
Aluminum	7429-90-5	15*	mg/m ³	10*	mg/m ³
Aromatic 100	64742-95-6	100	n/e	100	n/e
Aromatic 150	64742-94-5	n/e	n/e	n/e	n/e
Butane	106-97-8	800	n/e	800	n/e
2-Butoxyethanol**	111-76-2	25	n/e	25	n/e
n-Butyl Alcohol**	71-36-3	n/e	50	n/e	50
Carbon Black	1333-86-4	(TWA = 3.5 mg/m ³)			
Hexane	110-54-3	50	n/e	50	n/e
Isopropyl Alcohol	67-63-0	400	500	400	500
Lead Chromate***	1344-37-2	(0.05 mg/m ³ as Pb) (0.05 mg/m ³ as CrO ₃)			
Methyl Chloroform	71-55-6	350	450	350	450
Methyl Ethyl Ketone	78-93-3	200	300	200	300
Mineral Spirits	6832-32-4	300	400	300	n/e
Molybdate Orange***	12656-85-8	(0.05 mg/m ³ as Pb) (0.05 mg/m ³ as CrO ₃)			
Propane	74-98-6	1000	n/e	n/e	n/e
Stoddard Solvent	8052-41-3	100	n/e	100	n/e
Toluene	108-88-3	100	150	100	150
VN & P Naphtha	64742-89-8	300	400	300	n/e
Xylene	1338-20-7	100	150	100	150

NOTES

n/e: not established

TWA (Time Weighted Average): Maximum average airborne exposure limit in any 8 hour shift of a 40 hour work-week.

STEL (Short Term Exposure Limit): Maximum 15 minute weighted average airborne exposure limit, not to be exceeded at any time.

* Aluminum as total (metal) dust

** Can be absorbed through the skin.

*** Lead Chromate and Molybdate Orange are listed as suspect carcinogens by the National Toxicology Program (NTP), the Internal Agency for Research on Cancer (IARC), or the American Conference of Governmental Industrial Hygienists (ACGIH)

SECTION II: PHYSICAL CHARACTERISTICS

EVAPORATION RATE: slower than ether. VAPOR DENSITY: heavier than air.

PERCENT VOLATILE BY VOLUME: 70. MELTING POINT: n/a.

BOILING RANGE: n/a. SPECIFIC GRAVITY: n/a. VAPOR PRESSURE: n/a

SECTION III: FIRE & EXPLOSION HAZARD DATA

FLAMMABILITY CLASSIFICATION: extremely flammable.

FLASH POINT: -20°F FLAMMABLE LIMITS: LEL 1.9 UEL 8.5.

FIRE FIGHTING PROCEDURES: full protective equipment using self-contained breathing apparatus should be used. Water may be used to cool closed containers to prevent pressure build-up and possible explosion when exposed to extreme heat.

UNUSUAL FIRE AND EXPLOSION HAZARDS: spray mist or vapors from one can per 400 cubic feet of air may reach Lower Explosive Limit.

SECTION IV A - HEALTH HAZARD DATA FOR UNLEADED PAINTS ONLY

EFFECTS OF OVEREXPOSURE

EYES: may cause irritation, redness, tearing, blurred vision and conjunctivitis.

SKIN: prolonged or repeated contact may cause moderate irritation and defatting dermatitis.

BREATHING: excessive inhalation of vapors may cause headaches, nausea, drowsiness and irritation of mucous membrane of nose and throat.

EMERGENCY AND FIRST AID PROCEDURES

IN EYES: flush with water for 15 minutes, lifting upper and lower lids occasionally, obtain medical attention.

ON SKIN: wash contaminated area thoroughly with soap and water.

IF BREATHED: if affected, remove individual to fresh air. If breathing is difficult, administer oxygen only if trained. If breathing has stopped, give artificial respiration, preferably mouth-to-mouth. Keep person warm, quiet and obtain medical attention.

IF SWALLOWED: only induce vomiting at the instruction of a physician. Keep person warm, quiet and obtain medical attention.

THRESHOLD LIMIT VALUES: See Section I, above.

SECTION IV B - HEALTH HAZARD DATA FOR LEADED PAINTS ONLY

PRODUCT CONTAINS LEAD CHROMATE OR MOLYBDATE ORANGE OR BOTH. DRIED FILM OF THIS PAINT MAY BE HARMFUL OR FATAL IF EATEN OR CHEWED. CONTACT WITH BROKEN SKIN OR INHALATION OF SPRAY MIST OR SANDING DUST MAY CAUSE SEVERE BODILY HARM. USE WITH ADEQUATE VENTILATION.

LEAD CHROMATE AND MOLYBDATE ORANGE ARE SUSPECT CANCER HAZARDS. RISK OF CANCER DEPENDS ON DURATION AND LEVEL OF EXPOSURE.

PROLONGED OR REPEATED INHALATION AND INGESTION, SUCH AS FROM POOR HYGIENE, HOUSEKEEPING OR HANDLING PRACTICES, CAN RESULT IN LEAD POISONING.

EFFECTS OF OVEREXPOSURE

EYES: MAY CAUSE IRRITATION, REDNESS, TEARING, BLURRED VISION AND CONJUNCTIVITIS.

SKIN: PROLONGED OR REPEATED CONTACT MAY CAUSE MODERATE IRRITATION, DEFATTING DERMATITIS AND ABSORPTION THROUGH THE SKIN IN TOXIC AMOUNTS.

BREATHING: EXCESSIVE INHALATION OF VAPORS MAY CAUSE HEADACHES, NAUSEA, DROWSINESS, IRRITATION OF MUCOUS MEMBRANE OF NOSE AND THROAT, RESPIRATORY IRRITATION AND ALSO ALLERGIC REACTION.

IN EYES: FLUSH WITH WATER FOR 15 MINUTES, LIFTING UPPER LIDS OCCASIONALLY, OBTAIN MEDICAL ATTENTION.

ON SKIN: WASH CONTAMINATED AREA THOROUGHLY WITH SOAP AND WATER.

IF BREATHED: IF AFFECTED, REMOVE INDIVIDUAL TO FRESH AIR. IF BREATHING IS DIFFICULT, ADMINISTER OXYGEN ONLY IF TRAINED. IF BREATHING HAS STOPPED GIVE ARTIFICIAL RESPIRATION, PREFERABLY MOUTH-TO-MOUTH. KEEP PERSON WARM, QUIET AND OBTAIN MEDICAL ATTENTION.

IF SWALLOWED: ONLY INDUCE VOMITING AT THE INSTRUCTION OF A PHYSICIAN. KEEP PERSON WARM, QUIET AND OBTAIN MEDICAL ATTENTION.

THRESHOLD LIMIT VALUES: SEE SECTION I, ABOVE.

SECTION V: REACTIVITY DATA

STABILITY: stable. CONDITIONS TO AVOID: heat, sparks and fire.

HAZARDOUS POLYMERIZATION: will not occur.

HAZARDOUS DECOMPOSITION OR BYPRODUCTS: thermal decomposition may yield CO, CO₂.

SECTION VI: SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED: remove all sources of ignition, ventilate area, wipe up with inert material.

WASTE DISPOSAL METHOD: follow applicable Federal, state and local laws.

SECTION VII: PROTECTIVE EQUIPMENT

RESPIRATORY PROTECTION: not normally needed if local exhaust is satisfactory. If ventilation is inadequate, use respiratory mask approved by NIOSH/MESA for protection against spray mist.

VENTILATION: requirements vary with rate of product use. Supplement ventilation to keep below OSHA and ACGIH permissible levels of each ingredient.

PROTECTIVE GLOVES: not mandatory.

EYE PROTECTION: recommended.

SECTION VIII: PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING

Contents under pressure. Exposure to high temperatures may cause bursting. Avoid storing near radiator, stove, open flame or direct sunlight. Do not incinerate or puncture can. DOT STORAGE CATEGORY: Do not store at temperature above 120°F.

***** THIS MATERIAL SAFETY DATA SHEET IS NOT PART OF ANY CONTRACT OF SALE. THE INFORMATION CONTAINED HEREIN IS BELIEVED TO BE CORRECT OR IS OBTAINED FROM SOURCES BELIEVED TO BE GENERALLY RELIABLE. HOWEVER, IT IS THE RESPONSIBILITY OF THE USER OF THESE MATERIALS TO INVESTIGATE, UNDERSTAND AND COMPLY WITH LAW AND WITH PROCEDURES APPLICABLE TO THE SAFE HANDLING AND USE OF THESE MATERIALS. FOX VALLEY SYSTEMS, INC. SHALL NOT BE LIABLE FOR ANY LOSS OR DAMAGE DIRECTLY OR INDIRECTLY ARISING FROM THE USE OF THE PRODUCT, AND FOX VALLEY SYSTEMS, INC. ASSUMES NO OBLIGATION OR LIABILITY FOR RELIANCE ON THE INFORMATION

Storeroom Inventory

STOREROOM PART MASTER INQUIRY

PART NO	85717		
DESCRIPTION	SPRAY PAINT, TRAFFIC MARKING GREEN	TN1	
QU ON HAND	6		
QU @ NO COST			
QU ON ORDER			
AX QU			
MIN QU			
UNITS	EACH		
LOCATION	32.4.5		
AVG COST/UNIT	3.53		
DELIVERY DATE			
LEAD TIME	ENTRY 1717		
LAST ORDER			
DATE	2/11/97		
ORDER NO	028187		
VENDOR	FOX VALLEY MARKING S		
LAST RECEIVED	2/20/97		
COMMENTS	HAND OPERATED SPRAY CANS		
COMMENTS			

CMD 2 TO RETURN, CMD 3 FOR NEXT PAGE

STOREROOM PART MASTER INQUIRY

PART NO	85716		
DESCRIPTION	SPRAY PAINT, TRAFFIC MARKING YELLOW	#STY1 SUPER SUPREME	
QU ON HAND	107		
QU @ NO COST			
QU ON ORDER			
AX QU	24		
MIN QU	12		
UNITS	EACH		
LOCATION	32.4.5		
AVG COST/UNIT	4.82		
DELIVERY DATE			
LEAD TIME	ENTRY 1131		
LAST ORDER			
DATE	9/30/99		
ORDER NO	038404		
VENDOR	FOX VALLEY MARKING S		
LAST RECEIVED	10/11/99		
COMMENTS			
COMMENTS			

CMD 2 TO RETURN, CMD 3 FOR NEXT PAGE

MSDS's

Chlorine

CAT. NO. 14268

MATERIAL SAFETY DATA SHEET

POB: PH18225
HACH ORDER#: 888367MSDS DATE: 8/17/94
CHANGE NO.: 14902For Assistance, Contact:
Regulatory Affairs Dept.
PO Box 907 Ames, IA 50010
(800) 227-4224HACH COMPANY
PO BOX 907
AMES, IA 50010Emergency Telephone #
Rocky Mountain Poison Ctr.
(303) 623-5716

I. PRODUCT IDENTIFICATION

PRODUCT NAME: Chlorine Solution
CAS NO.: NA CHEMICAL NAME: Not applicable
FORMULA: Not applicable CHEMICAL FAMILY: Not applicable

II. INGREDIENTS

Chlorine
PCT: <0.1 CAS NO.: 7782-50-5 SARA: NOT LISTED
TLV: 0.5 ppm PEL: 1 ppm ceiling
HAZARD: Very toxic when inhaled; causes burnsDemineralized Water
PCT: to 100 CAS NO.: 7732-18-5 SARA: NOT LISTED
TLV: Not applicable PEL: Not applicable
HAZARD: None

III. PHYSICAL DATA

STATE: liquid APPEARANCE: Clear, colorless ODOR: Chlorine
SOLUBILITY IN: WATER: Miscible ACID: Not determined
OTHER: Not determined BOILING POINT: 100C MELTING PT.: NA
SPEC GRAVITY: 0.989 pH: 3.0 VAPOR PRESSURE: Not applicable
VAPOR DENSITY (air=1): NA EVAPORATION RATE: 0.53
METAL CORROSIVITY - ALUMINUM: ND STEEL: ND STABILITY: Stable
STORAGE PRECAUTIONS: Store in a refrigerator.

IV. FIRE, EXPLOSION HAZARD AND REACTIVITY DATA

FLASH PT.: Not applicable METHOD: NA
FLAMMABILITY LIMITS - LOWER: NA UPPER: NA
SUSCEPTIBILITY TO SPONTANEOUS HEATING: None
SHOCK SENSITIVITY: None AUTOIGNITION PT.: NA
EXTINGUISHING MEDIA: Not applicable
FIRE/EXPLOSION HAZARDS: Not applicable
HAZARDOUS DECOMP. PRODUCTS: None
OXIDIZER: No NFPA Codes: Health: 1 Flammability: 0 Reactivity: 0
CONDITIONS TO AVOID: Heat and light

V. HEALTH HAZARD DATA

THIS PRODUCT MAY BE: Irritating to eyes.
ACUTE TOXICITY: Practically non-toxic
ROUTES OF EXPOSURE: Not applicable
TARGET ORGANS: Not applicable
CHRONIC TOXICITY: Not determined
ROUTES OF EXPOSURE: Not determined
TARGET ORGANS: Not determined
CANCER INFORMATION: Not applicable
ROUTES OF EXPOSURE: Not applicable
TARGET ORGANS: Not applicable
OVEREXPOSURE: May cause eye irritation
MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: None reported

VI. PRECAUTIONARY MEASURES

Avoid contact with eyes.
Wash thoroughly after handling.
PROTECTIVE EQUIPMENT: adequate ventilation, lab grade goggles

VII. FIRST AID

EYE AND SKIN CONTACT: Immediately flush eyes with water for 15 minutes. Call physician. Flush skin with plenty of water.
INGESTION: Give large quantities of water. Call physician immediately.
INHALATION: Not applicable

VIII. SPILL AND DISPOSAL PROCEDURES

IN CASE OF SPILL OR RELEASE: Dilute with water. Pour down the drain with excess water.
DISPOSE OF IN ACCORDANCE WITH ALL FEDERAL, STATE, AND LOCAL REGULATIONS.

IX. TRANSPORTATION DATA

D.O.T. PROPER SHIPPING NAME: Not Currently Regulated
HAZARD CLASS: NA ID: NA GROUP: NAI.C.A.O. PROPER SHIPPING NAME: Not Currently Regulated
HAZARD CLASS: NA ID: NA GROUP: NAI.M.O. PROPER SHIPPING NAME: Not Currently Regulated
HAZARD CLASS: NA ID: NA GROUP: NA

X. REFERENCES

- 1) TLV's Threshold Limit Values and Biological Exposure Indices for 1988-1989. American Conference of Governmental Industrial Hygienists, 1988.
- 2) Air Contaminants, Federal Register, Vol. 54, No. 12, Thursday, January 19, 1989. pp. 2332-2983.
- 3) In-house information
- 4) Technical judgment

DATE: 10-27-94

R DISTRIBUTION

(X) TECHNICAL	() POWER PLANT
(X) WWTP	(X) STORES
() ROLL WRAP	() #5/6 OFFICE
() MAINTENANCE	() #7 OFFICE
(X) MATERIAL PREP	() #8 OFFICE

U.S. DEPARTMENT OF LABOR
Occupational Safety and Health Administration

Form Approved
OSHA No. 20-R-1357

MATERIAL SAFETY DATA SHEET

5/29/86

Required under USDL Safety and Health Regulations for Ship Repairing,
Shipbuilding, and Shipbreaking (29 CFR 1915, 1916, 1917)

SECTION I

MANUFACTURER'S NAME Patterson Laboratories Inc.		EMERGENCY TELEPHONE NO. 313-843-4500
ADDRESS (Number, Street, City, State, and ZIP Code) 11030 Pleasant Avenue, Detroit, Michigan 48217		
CHEMICAL NAME AND SYNONYMS Laundry Bleach		CLARK BLEACH
CHEMICAL NAME Sodium Hypochlorite		FORMULA OCl

SECTION II - HAZARDOUS INGREDIENTS

PAINTS, PRESERVATIVES, & SOLVENTS	%	TLV (Units)	ALLOYS AND METALLIC COATINGS	%	TLV (Units)
PIGMENTS	NA		BASE METAL	NA	
CATALYST	NA		ALLOYS	NA	
VEHICLE	NA		METALLIC COATINGS	NA	
SOLVENTS	NA		FILLER METAL PLUS COATING OR CORE FLUX	NA	
ADDITIVES	NA		OTHERS	NA	
OTHERS	NA				

HAZARDOUS MIXTURES OF OTHER LIQUIDS, SOLIDS, OR GASES	%	TLV (Units)
Chlorine	5.54%	
Sodium Hypochlorite	7.20%	

SECTION III - PHYSICAL DATA

BOILING POINT (°F.)	N/A	SPECIFIC GRAVITY (H ₂ O=1)	1.084
VAPOR PRESSURE (mm Hg.)	N/A	PERCENT. VOLATILE BY VOLUME (%)	N/A
VAPOR DENSITY (AIR=1)	N/A	EVAPORATION RATE (=1)	N/A
SOLUBILITY IN WATER	Appreciable		
APPEARANCE AND ODOR	Green-yellow color with a chlorine odor		

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (Method used)	N/A	FLAMMABLE LIMITS	LEL	UEL
EXTINGUISHING MEDIA	N/A			
SPECIAL FIRE FIGHTING PROCEDURES	N/A			
UNUSUAL FIRE AND EXPLOSION HAZARDS	N/A			

SECTION V - HEALTH HAZARD DATA

THRESHOLD LIMIT VALUE

None listed

EFFECTS OF OVEREXPOSURE

Irritating to eyes. Symptoms following oral ingestion are, abdominal pain, nausea and vomiting.

EMERGENCY AND FIRST AID PROCEDURES

Eyes: Wash with water for fifteen (15) minutes. If irritation persists see a physician.

SECTION VI - REACTIVITY DATA

STABILITY	UNSTABLE	XXXX	CONDITIONS TO AVOID High temperatures, metal impurities and
	STABLE		acid condition.

COMPATIBILITY (Materials to avoid)
Acids, organic materials and reducing agents.

HAZARDOUS DECOMPOSITION PRODUCTS
Chlorine and oxygen.

HAZARDOUS POLYMERIZATION	MAY OCCUR		CONDITIONS TO AVOID
	WILL NOT OCCUR	XXXXX	

SECTION VII - SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED
Flush with large amounts of water.

WASTE DISPOSAL METHOD

Review all applicable regulations before disposal. High concentration of hypochlorite may affect fish and plant life.

SECTION VIII - SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION (Specify type)

case of rapid decomposition, mask approved by U.S. Bureau of mines for chlorine.

VENTILATION

LOCAL EXHAUST

Sufficient to remove chlorine odor

SPECIAL

MECHANICAL (General)

OTHER

PROTECTIVE GLOVES

Rubber

EYE PROTECTION

Recommend with side protection

OTHER PROTECTIVE EQUIPMENT

Safety showers. Eye wash fountain.

SECTION IX - SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE

Do not use on silk, wool, unfast colors, leather, any sponge except vinyl, neck, grip, dry fabrics and washable ear pads. Do not use with ammonia, silver, aluminum, steel, or chipped enamelware. Do not use with ammonia, toilet bowl cleaners, or other chemicals.

Precautions: Store out of heat, sunlight and away from acids and reducing agents. Do not stack cases over five (5) high. Protect against damaging cases.

MSDS's

Cyclohexylamine



P

Material Safety Data Sheet

may be used to comply with
Hazard Communication Standard,
29 CFR 1910.1200. Standard must be
consulted for specific requirements.

U.S. Department of Labor
Occupational Safety and Health Administration
(Non-Mandatory Form)
Form Approved
OMB No. 1218-0072

ENTITY (As Used on Label and List)

900P

Note: Blank spaces are not permitted. If any item is not applicable, or no
information is available, the space must be marked to indicate that.

Section I

Manufacturer's Name

Plasma Coatings, Inc.

Emergency Telephone Number

(203) 757-8747

Address (Number, Street, City, State, and ZIP Code)

158 East Main Street

Telephone Number for Information

(203) 757-8747

Waterbury, CT 06702

Date Prepared

7/29/88

Signature of Preparer (optional)

Section II — Hazardous Ingredients/Identity Information

Hazardous Components (Specific Chemical Identity; Common Name(s))	OSHA PEL	ACGIH TLV	Other Limits Recommended	% (optional)
---	----------	-----------	--------------------------	--------------

ETHYLENE GLYCOL MONOBUTYL ETHER

50 PPM

~12%

CAS NO 111-76-2

TRICHLOROTRIFLUOROETHANE

NOT HAZARDOUS

CAS NO 76-13-1

1000 PPM

~87%

Section III — Physical/Chemical Characteristics

Boiling Point	115° F	Specific Gravity (H ₂ O = 1)	1.47
Vapor Pressure (mm Hg.)	75° F	Melting Point	NA
Vapor Density (AIR = 1)	~4	Evaporation Rate	CCl ₄ = 1
Solubility in Water			2.8

SLIGHT: SOME HYDROLYSIS

Appearance and Odor

CLEAR LIQUID WITH ETHEREAL ODOR

Section IV — Fire and Explosion Hazard Data

Flash Point (Method Used)	Flammable Limits	LEL	UEL
NON FLAMMABLE	NA		
Extinguishing Media			
CO ₂ , FOAM OR DRY CHEMICAL			
Recommended Fighting Procedures			
NONE KNOWN			

Unusual Fire and Explosion Hazards

NONE KNOWN

Section V — Reactivity Data

Stability	Unstable		Conditions to Avoid
	Stable	X	

Compatibility (Materials to Avoid)

STRONG OXIDANTS

Hazardous Decomposition or Byproducts

Halogens, Halogen acids, carbonyl halides, CO, CO₂, metal oxides

Hazardous Polymerization	May Occur		Conditions to Avoid
	Will Not Occur	X	

Section VI — Health Hazard Data

Route(s) of Entry:	Inhalation?	YES	Skin?	YES	Ingestion?	NO
--------------------	-------------	-----	-------	-----	------------	----

Health Hazards (Acute and Chronic)

Inhalation - Vapor is heavier than air and can cause suffocation.

Skin - irritant; defatting of skin; Eyes - irritant; may form a precipitate on contact

with eye tissue which may require mechanical removal.

Carcinogenicity: NTP? NOT LISTED IARC Monographs? NOT LISTED OSHA Regulated? NOT LISTED

Signs and Symptoms of overexposure

Lightheadedness, giddiness, shortness of breath, narcosis

Medical Conditions
Generally Aggravated by Exposure

Over-
Exposure Cardiac irregularities, unconsciousness, cardiovascular disease

First Aid Procedures

Inhalation: Remove to fresh air, call physician

Skin and Eyes: Flush with water for 15 minutes; consult physician

Section VII — Precautions for Safe Handling and Use

Steps to Be Taken in Case Material Is Released or Spilled

Ventilate area, remove open flames; mop, wipe or
soak up excess with absorbent material.

Waste Disposal Method

Residue from evaporated solvent may be used in landfill in accordance with
Federal, State, and local regulations.

Precautions to Be Taken in Handling and Storing

Keep container closed; moisture degrades product; store in
ventilated area away from heat.

Other Precautions

Use with adequate ventilation; avoid skin & eye contact.

Section VIII — Control Measures

Respiratory Protection (Specify Type)

NOT REQUIRED IN VENTILATED AREAS

Local Exhaust	YES	Special
Mechanical (General)	RECOMMENDED	Other

Gloves	Rubber or plastic	Eye Protection	Chemical Safety Glasses
--------	-------------------	----------------	-------------------------

Protective Clothing or Equipment

As required by your company

Work/Hygiene Practices

WASH THOROUGHLY AFTER USING; USE IN WELL VENTILATED AREAS.

MSDS's

Epichlorohydrin



MATERIAL SAFETY DATA SHEET

MSDS NO.: 595 6156 0300 VER: 08

SAP CODE: 400WS4040A00000014

ISSUE DATE: 10/06/1999

SUPERSEDES: 595 6156 0300 VER: 07

Hercules Incorporated
Pulp and Paper Division
Hercules Plaza
1313 North Market Street
Wilmington, DE 19894-0001
(302) 594-5000 (24 HRS)

Date 10-13-99 () New (X) Revised
(X) Technical (X) Maintenance
() Power Plant () WWTP
() Lab () #7 Office
(X) #5/6 Office (X) #8 Office (X) Main Gate
() Material Prep (X) Stores (X) Roll Wrap

1 PRODUCT IDENTIFICATION

PRODUCT NAME KYMENE® PLUS WET-STRENGTH RESIN
CHEMICAL DESCRIPTION aqueous solution of a cationic amine polymer-epichlorohydrin adduct
CAS NUMBER proprietary

2 COMPOSITION / INFORMATION ON INGREDIENTS

OSHA Hazardous Ingredient	CASRN	Amount
1,3 dichloropropan-2-ol	96-23-1	0.5 - 5 %

3 HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

CAUTION!

Prolonged or repeated contact may cause skin irritation and may cause skin sensitization (allergic reaction) in susceptible individuals.

May cause eye irritation.

Inhalation of vapor may be irritating to mucous membranes.

Inhalation of mist may be irritating to mucous membranes.

POTENTIAL HEALTH EFFECTS

Possible cancer hazard. Product contains 1,3-dichloropropan-2-ol, a component that may cause cancer based on animal and other laboratory studies. Risk of cancer depends on duration and level of exposure. Overexposure to 1,3-dichloropropan-2-ol may cause kidney or liver damage.

Refer to Section 5 for Hazardous Combustion Products, and Section 10 for Hazardous Decomposition/Hazardous Polymerization Products.

4 FIRST AID MEASURES

SKIN

Wash thoroughly with soap and water. Remove contaminated clothing. Thoroughly wash clothing before reuse.

EYE

Remove contact lenses. Hold eyelids apart. Immediately flush eyes with plenty of low-pressure water for at least 15 minutes. Get immediate medical attention.

INHALATION

Remove to fresh air. Treat any irritation symptomatically. Get medical attention if nasal, throat or lung irritation develops.

INGESTION

If conscious, drink large quantities of water. Induce vomiting. Get immediate medical attention. NEVER give anything by mouth to an unconscious person. NEVER induce vomiting in an unconscious person.

5 FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA

Water spray, dry chemical, foam, carbon dioxide or clean extinguishing agents may be used on fires involving this product.

FIRE FIGHTING PROCEDURES

This material is an aqueous dispersion and will not support combustion.

Wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH approved (or equivalent) and full protective gear when fighting fires involving this product.

CONDITIONS TO AVOID

None known.

HAZARDOUS COMBUSTION PRODUCTS

If heated to decomposition, the following substances may be formed: carbon monoxide, carbon dioxide, nitrogen oxides, hydrogen chloride, hydrogen cyanide and ammonia.

6 ACCIDENTAL RELEASE MEASURES

Add absorbent, sweep up, and dispose appropriately. For large spills: Dike to contain and pump into drums for use or disposal. Clean surrounding area with soda ash. In case of accidental spill or release, refer to Section 8, Personal Protective Equipment and General Hygiene Practices.

7 HANDLING & STORAGE

GENERAL MEASURES

Keep container closed when not in use.

MATERIALS OR CONDITIONS TO AVOID

Protect from freezing.

8 EXPOSURE CONTROLS / PERSONAL PROTECTION

WORK PRACTICES & ENGINEERING CONTROLS

Eyewash fountains and safety showers should be easily accessible.

Enter confined space only after assuring that concentrations of hazardous ingredients are within the allowable limits or while using NIOSH-approved, supplied-air breathing apparatus.

Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits. Discharge from the ventilation system should comply with applicable air pollution control regulations.

GENERAL HYGIENIC PRACTICES

Avoid breathing vapor or mist.

Avoid contact with eyes, skin, and clothing.

Wash thoroughly after handling, and before eating, drinking or smoking.

Remove contaminated clothing promptly and clean thoroughly before reuse.

RECOMMENDED EXPOSURE LIMITS

Hercules Recommended Exposure Limit

1,3 dichloropropan-2-ol

2 ppm TWA

PERSONAL PROTECTIVE EQUIPMENT

Safety glasses

Impervious gloves

Appropriate respiratory protection is required when exposure to airborne contaminants may exceed acceptable limits. Respirators should be selected and used in accordance with OSHA, Subpart I (29 CFR 1910.134) and manufacturers recommendations.

PROTECTIVE MEASURES DURING REPAIR AND MAINTENANCE

Completely isolate and thoroughly clean all equipment, piping, or vessels before beginning maintenance or repairs.

9 PHYSICAL & CHEMICAL PROPERTIES

PHYSICAL STATE:	aqueous solution
COLOR:	amber
ODOR:	odorless
Boiling Point	212 F
Specific Gravity	1.0998 at 25 C
Vapor Pressure	similar to water
Evaporation Rate	similar to water
Vapor Density	lighter than air
Solubility In Water	miscible with water
pH Value	4.5 - 6
Freezing Point	32 F
Weight % Solids	30

10 STABILITY & REACTIVITY

HAZARDOUS DECOMPOSITION PRODUCTS

None anticipated under normal or recommended handling and storage conditions.

HAZARDOUS POLYMERIZATION

Not anticipated under normal or recommended handling and storage conditions.

GENERAL STABILITY CONSIDERATIONS

Stable under recommended handling and storage conditions.

INCOMPATIBLE MATERIALS

None known

11 TOXICOLOGICAL INFORMATION

CARCINOGENICITY INFORMATION

PRODUCT/SIMILAR PRODUCT - Not listed as a carcinogen by NTP. Not regulated as a carcinogen by OSHA. Not evaluated by IARC.

COMPONENT - 1,3-dichloropropan-2-ol: Chronic drinking water study in rats caused liver, kidney, oral and thyroid tumors at 80 mg/liter. No effect noted at 27 mg/liter.

REPORTED HUMAN EFFECTS

PRODUCT/SIMILAR PRODUCT - May have sensitization potential at higher concentrations but does not produce an allergic response in more dilute concentrations. Repeated insult patch test of a 12% solution elicited a sensitization response in 2 of 52 subjects. A previous study using a 5% solution on 50 subjects produced neither irritation nor sensitization.

REPORTED ANIMAL EFFECTS

PRODUCT/SIMILAR PRODUCT - Acute oral LD50 (rat): 6834 mg/kg; Acute inhalation (4 hrs, rat): > 11.2 mg/liter. Eye irritation (rabbit): unwashed, moderate conjunctivitis through seven days, normal at 14 days; washed, all eyes normal by two days. Dermal irritation (rabbit): moderate (Draize score, 3/8). Not a skin irritant by FHSA standards. Using a 5% solution, acute oral LD50 (mouse): > 2500 mg/kg; eye irritation (rabbit): mild conjunctivitis, normal in 48 hrs.

COMPONENT - 1,3-dichloropropan-2-ol: Acute studies: Oral LD50 (rat) 110 mg/kg. Oral LD50 (mouse) 100 mg/kg. Inhalation LC50 (4 hrs, rat) 125 ppm, (2/6 deaths); 250 ppm (6/6 deaths). Dermal LD50 (rabbits) 800 mg/kg. Skin irritation (rabbit) mild; eye irritation (rabbit) severe. Liver and kidney damage was observed in acute oral and inhalation studies. Subacute studies: 13-week oral gavage (rat). Dose level of 100 mg/kg/day produced decreases in body weight gain, feed consumption, and hematologic parameters, increases in clinical chemistry values, and kidney and liver weight ratios. Doses of 1 mg/day considered as no-observed-adverse-effect level (NOAEL).

MUTAGENICITY/GENOTOXICITY INFORMATION

PRODUCT/SIMILAR PRODUCT - No mutagenicity studies have been carried out with this product.

COMPONENT - 1,3-dichloropropan-2-ol: Active in the Ames test. Caused sister chromatid exchange and chromosome aberrations in Chinese hamster ovary cells and mutation of mouse lymphoma cells.

12 ECOLOGICAL INFORMATION

ECOTOXICOLOGICAL INFORMATION

PRODUCT/SIMILAR PRODUCT - Cationic polymers, in general, exhibit high toxicity to aquatic organisms when tested in purified laboratory water. However, when tested in water supplemented with organic acids at a level simulating natural water conditions, the results demonstrated a 100-fold decrease in toxicity.

AQUATIC TOXICITY

COMPONENT - polyamide resin: Acute aquatic 96-hour static LC50 values fall within the moderately toxic range of 1-10 mg/l. Fathead minnow and rainbow trout were the species tested. Salmon parr were also tested and the 96-hour static LC50 value was within the slightly toxic range of 10-100 mg/l. Acute aquatic 48-hour static EC50 value, in the Daphnia, falls within the moderately toxic range of 1-10 mg/l.

BIODEGRADABILITY

COMPONENT - polyamide resin: This product is not biodegradable.

13 DISPOSAL CONSIDERATIONS

WASTE DISPOSAL

Incineration in accordance with applicable regulations is the recommended disposal method. Supplemental fuel may be required. Wastewater containing this product can be considered for treatment in an acclimated biological treatment system.

14 TRANSPORT INFORMATION

GENERAL

This product is not subject to DOT, ICAO, IMDG or ADR regulations.

For specific information regarding transportation of this product, please contact the Hercules Transportation Department at (302) 594-7356 or FAX at (302) 594-7256.

15 REGULATORY INFORMATION

CHEMICAL INVENTORIES

U.S. TSCA: The components of this product are included on the TSCA Inventory.

SARA TITLE III - SECTIONS 302/304

This product is not an Extremely Hazardous Substance subject to reporting under 40CFR355.

SARA TITLE III - SECTION 311 AND 312

HC-1: Acute health hazard
HC-2: Chronic health hazard
NPH: Not a physical hazard

SARA TITLE III - SECTION 313

This product does not contain any chemicals subject to reporting under Section 313 of Title III of the Superfund Amendments and Reauthorization Act and 40CFR372.

CERCLA

This product does not contain any chemicals subject to reporting as a CERCLA Hazardous Substance under 40CFR302.4.

RCRA

This product is not a hazardous waste as listed in 40CFR261.33. It does not exhibit any of the hazardous characteristics listed in 40CFR261, Subpart C.

16 OTHER INFORMATION

HMIS RATINGS:

Health	2	Moderate Hazard
Flammability	0	Minimal Hazard
Reactivity	0	Minimal Hazard

LIST OF ACRONYMS

ACGIH: American Conferences of Governmental Industrial Hygienists
AIHA WEEL: American Industrial Hygienists Association - Workplace Environmental Exposure Level
CASRN: Chemical Abstracts Service Registry Number
CERCLA: Comprehensive Emergency Response, Compensation and Liability Act
HMIS: Hazardous Materials Identification System
IARC: International Agency for Research on Cancer
NTP: National Toxicology Program
OSHA: Occupational Safety and Health Administration
PEL: OSHA Permissible Exposure Limit
RCRA: Resource Conservation and Recovery Act
RQ: Reportable Quantity
SARA: Superfund Amendment Reauthorization Act
STEL: Short-Term Exposure Limit
TLV: Threshold Limit Values (registered trademark of ACGIH)
TPQ: Threshold Planning Quantity
TSCA: Toxic Substance Control Act
TWA: Time Weighted Average

DISCLAIMER

The information and recommendations contained in this Material Safety Data Sheet have been compiled from sources believed to be reliable and to represent the most reasonable current opinion on the subject when the MSDS was prepared. No warranty, guaranty or representation is made as to the correctness or sufficiency of the information. The user of this product must decide what safety measures are necessary to safely use this product, either alone or in combination with other products, and determine its environmental regulatory compliance obligations under any applicable federal or state laws.

MATERIAL SAFETY DATA SHEET

Manufactured By: TROWELON, INC.
973 Haven Drive
Green Bay, WI 54313
(414) 499-8778

Date 4-1-98 ☒ New () Revised
☒ Technical ☒ Maintenance
() Power Plant ☒ WWTP
() Lab ☒ #7 Office
☒ #5/6 Office ☒ #8 Office ☒ Main Gate
☒ Material Prep ☒ Stores ☒ Roll Wrap

SECTION I - PRODUCT IDENTIFICATION

PRODUCT NAME: TROWELON 303 Part B

GENERAL OR GENERIC ID: Modified Epoxy Resin

DESCRIPTION: Modified Epoxy Resin To Be Used With TROWELON 303 Parts
A and C.

NPA Hazard Rating:	4 - Extreme	Health	2
	3 - High	Fire	1
	2 - Moderate	Reactivity	0
	1 - Slight		
	0 - Insignificant		

SECTION II - HAZARDOUS COMPONENTS

Phenol, 4,4'-(1-Methylethylidene)bis-, Polymer with (Chloromethyl) Oxirane

CAS#: 25068-38-6

OSHA - PEL: Not Established

ACGIH - TLV: Not Established

Alkyl (C12-C14) Glycidyl Ether

CAS# 68609-97-2

OSHA - PEL: Not Established

ACGIH - TLV: Not Established

This document is prepared pursuant to the OSHA Hazard Communication Standard (29 CFR 1910-1200). In addition, other substances not 'Hazardous' per this OSHA Standard may be listed. Where proprietary ingredient shows, the identity may be made available as provided in this standard.

SECTION III - PHYSICAL DATA

BOILING POINT -- >200°C (C12 & C14 Alkylglycidyl Ethers)

VAPOR PRESSURE -- <0.1 MM HG @ 20°C (C12 & C14 Alkylglycidyl ethers)

VAPOR DENSITY (AIR = 1) -- Not Available

SPECIFIC GRAVITY -- 1.12 @ 77°F (25°C)

PERCENT NONVOLATILES -- 100%

EVAPORATION RATE -- Nonvolatile

APPEARANCE AND ODOR -- Straw Colored Viscous Liquid, Slight Aromatic
Odor

SOLUBILITY IN WATER -- Negligible

SECTION IV - REACTIVITY DATA

STABILITY: Stable

CONDITIONS TO AVOID: Elevated Temperatures And Strong Acids Or Bases In Bulk

INCOMPATIBILITY: Product can react vigorously with strong oxidizing agents, strong Lewis or mineral acids and organic bases especially primary and secondary aliphatic amines. Reaction with some curing agents may produce considerable heat. Run-a-way cure reactions may char and decompose the resin system, generating unidentified fumes and vapors that may be toxic.

HAZARDOUS DECOMPOSITION PRODUCTS: Carbon monoxide, carbon dioxide, aldehydes, acids, and other organic substances may be formed during combustion or elevated (>500°F) temperature degradation.

HAZARDOUS POLYMERIZATION: Will Not Occur

SECTION V -- FIRE AND EXPLOSION DATA

FLASH POINT: >200°F

EXTINGUISHING MEDIA: Water Foam, Carbon Dioxide, Foam, Dry Chemical, Water Spray

FIRE FIGHTING PROCEDURES - SPECIAL: Material will not burn unless preheated. Do not enter confined fire space without full bunker gear (helmet with face shield, bunker coats, gloves, and rubber boots). Use a positive pressure NIOSH approved self-contained breathing apparatus. Cool fire exposed containers with water.

UNUSUAL FIRE AND EXPLOSION HAZARDS: Decomposition and combustion products may be toxic.

SECTION VI - HEALTH DATA

PRIMARY ROUTES OF EXPOSURE: Dermal

ORAL LD50: (Rats) - 11.4 g/kg

DERMAL LD50: (Rabbits) >20 ml/kg

EFFECTS OF OVEREXPOSURE:

EYES: Product is moderately irritating to the eyes. Contact with product at elevated temperatures can result in thermal burns.

SKIN: Product is moderately irritating to the skin. Product may cause skin sensitization. Contact with product at elevated temperatures can cause thermal burns.

INHALATION: Because of its low volatility this product is not likely to be an inhalation hazard.

INGESTION: Product is acutely toxic. An ingestion of a large single dose may cause nausea, vertigo, photophobia, and blood and protein in the urine.

SIGNS AND SYMPTOMS: Product can be irritating as noted above. Skin sensitization (allergy) may be evident by rashes, especially hives. Lung sensitization (for example, allergy, asthma) may be evidenced by wheezing with shortness of breath and cough.

AGGRAVATED MEDICAL CONDITIONS: Preexisting skin and eye disorders may be irritated by exposure to this product. Preexisting skin or lung allergies may increase the chance of developing increased allergy systems from exposure to this product. Persons with certain neurological diseases should consult a physician prior to exposure to this product.

OTHER HEALTH EFFECTS: Chronic studies: Recent 2-year bioassays in mice exposed by the dermal route to product, the diglycidyl ether of bisphenyl A (DGEBA), or other commercial resins which are composed predominately of DGEBA have yielded very limited evidence of weak carcinogenicity. DGEBA is a component of this product. The authors of this work concluded that the renal tumor evidence with DGEBA 'was of no biological significance' and that the resin 'is not a systemic carcinogen when applied to the dorsal skin of CF1 mice.' Considering this and all other available information, the International Agency for Research on Cancer (IARC) concluded (1988) that DGEBA was not classifiable as a carcinogen (IARC GROUP 3) based on the following:

Human evidence - inadequate;

Animal evidence - inadequate.

Mutagenicity: Both product and DGEBA, a component of this product, have proved to be inactive when tested by in vivo mutagenicity assays. They both show activity by in vitro microbial mutagenicity screening and have both produced chromosomal aberrations in cultured rat liver cells. The significance of this information to man is unknown.

Materials similar to Alkyl (C12-C14) Glycidyl ether have been reported to show positive results in in vitro mutagenicity testing but in vivo tests have shown negative results. Note: This product component contains trace <10 PPM residual quantities of epichlorohydrin (ECH), CAS# 106-89-8. It is very unlikely that normal work practices with this product could result in measurable ECH concentrations in the workplace atmosphere.

Nevertheless, you should be aware that ECH has been reported to produce cancer in laboratory animals and to produce mutagenic changes in bacteria and cultured human cells. It has been classified by the International Agency for Research on Cancer (IARC) as a probable human carcinogen (IARC group 2A) based on the following conclusions:

Human evidence - inadequate

Animal evidence - sufficient.

It has been classified as an anticipated human carcinogen by the National Toxicology Program (NTP).

EMERGENCY AND FIRST AID PROCEDURES

EYES: Immediately flush eyes with water for at least 15 minutes with running water. Hold eyelids apart to ensure rinsing of the entire eye surface and lids with water. If contact with hot product occurs, immediately flush with cool water for 15 minutes. Get immediate medical attention.

SKIN: Remove contaminated clothing and shoes and wipe excess from skin. Flush with water. Follow by washing with soap and water. If irritation occurs, get medical attention. Do not reuse clothing until cleaned. Contaminated leather articles, including shoes, cannot be decontaminated and should be destroyed to prevent reuse. If contact with hot product occurs, immediately flush with cool water for 15 minutes. Carefully remove clothing. If clothing is stuck to a burn area, do not pull it off but cut around it. Cover burn area with a clean material. Get medical attention immediately.

INGESTION: Do not induce vomiting. Get medical advice.

INHALATION: Remove from area to fresh air. If not breathing, give artificial respiration. Get immediate medical attention. If breathing is difficult, transport to medical care and, if available, give supplemental oxygen.

NOTE TO PHYSICIAN: In general, Emesis induction is unnecessary in high viscosity, low volatility products. If symptoms such as loss of gag reflex, convulsions or unconsciousness occur, emesis, gastric lavage should be considered following intubation with cuffed endotracheal tube.

SECTION VII - ENVIRONMENTAL AND DISPOSAL INFORMATION

SPILL PROCEDURES: This product may burn although not readily ignitable. Use cautious judgment when cleaning up large spills.

Large spills: Wear respirator and protective clothing as appropriate. Shut off source of leak if safe to do so. Dike and contain spill. Remove with vacuum truck or pump to storage or salvage vessels. Take up with absorbent material such as clay, sand or other suitable material. Shovel into closable containers. Flush contaminated area with water.

Small spills: Take up with absorbent material and dispose of properly. Flush contaminated area with water.

WASTE DISPOSAL METHODS: Do not flush into sewer. Dispose in accordance with federal, state and local regulations.

SECTION VIII - HANDLING PRECAUTIONS

VENTILATION: Good General Mechanical Ventilation And Local Exhaust

PROTECTIVE GLOVES: Wear chemical resistant gloves.

EYE PROTECTION: Wear safety glasses with side shields or chemical goggles or complete face shield.

RESPIRATORY PROTECTION: Not Ordinarily Required

OTHER PROTECTIVE EQUIPMENT: Wear appropriate equipment to prevent eye or skin contact. Use of barrier cream recommended.

SECTION IX - SPECIAL PRECAUTIONS OR OTHER COMMENTS

Store in a cool, dry place. Keep away from open flames and high temperature. Containers, even those that have been emptied, can contain hazardous product residues. Handle in accordance with hazard potential of curing agent used.

Caution: May cause irritation. Avoid contact with eyes. Avoid prolonged or repeated contact with skin.

Wash with soap and water before eating, drinking, smoking, applying cosmetics, or using toilet facilities.

Laundry contaminated clothing before reuse.

Contaminated leather articles, including shoes, cannot be decontaminated and should be destroyed to prevent reuse.

Heating this product above 300°F in the presence of air may cause slow oxidative decomposition. Heating above 500°F may cause polymerization. Some curing agents, for example aliphatic polyamines can produce exothermic reactions which in large masses can cause runaway polymerization and charring of the reactants. Fumes and vapors from the thermal and chemical decompositions vary widely in composition and toxicity. Do not breathe fumes. Avoid skin and eye contact with hot liquids.

SECTION X - TRANSPORTATION REQUIREMENTS

DOT: Not regulated
DOT PROPER SHIPPING NAME: Epoxy Resin

SECTION XI - STATE REGULATORY INFORMATION

The following chemicals are specifically listed by individual states. Other specific health and safety data in this MSDS may also be applicable for state requirements. For details on your regulatory requirements you should contact the appropriate agency in your state.

State Listed Component	CAS #	Percent	State Code
Digycidyl ether	2238-07-5	2 PPM	MA
Phenyl Glycidyl ether	122-60-1	6 PPM	CA65
Epichlorohydrin	106-89-8	0-5 PPM	MA, CA65

CA = California Haz. Subst. List; CA65 = California Safe Drinking Water And Toxic Enforcement Act List; CT = Connecticut Tox. Subst. List; FL = Florida Subst. List; IL = Illinois Tox. Subst. List; LA = Louisiana Haz. Subst. List; MA = Massachusetts Subst. List; ME = Maine Haz. Subst. List; MN = Minnesota Haz. Subst. List; NJ = New Jersey Haz. Subst. List; PA = Pennsylvania Haz. Subst. List; RI = Rhode Island Haz. Subst. List

This product contains a chemical or chemicals know to the state of California to cause cancer and/or reproductive toxicity.

SECTION XII - SUPPLEMENT

REGULATORY INFORMATION:

RCRA STATUS: A Hazardous Waste Under RCRA (40 CFR 261)

CERCLA STATUS: None Found

SARA TITLE III - TOXIC CHEMICALS LIST: This product does not contain a toxic chemical for routine annual toxic chemical release reporting under Sec. 313 (40 CFR 372).

TSCA INVENTORY STATUS: Chemical components are listed on TSCA Inventory.

In accordance with SARA TITLE III, section 313, the attached Environmental Data Sheet (EDS) should always be copied and sent with the MSDS.

Protection of the stratospheric ozone (pursuant to section 611 of the Clean Air Act amendments of 1990) per 40 CFR PART 82, this product does not contain nor was it directly manufactured with any CLASS I or CLASS II ozone depleting substances.

ISSUE DATE: October 14, 1995 Supersedes December 1, 1990

The data in this Material Safety Data Sheet relates only to the specific material designated and does not relate to its use in combination with any other material or process. The data contained is believed to be correct. However, since conditions of use are outside our control it should not be taken as a warranty or representation for which TROWELON, INC., assumes legal responsibility. This information is provided solely for your consideration, investigation, and verification.

ENVIRONMENTAL DATA SHEET

Product: TROWELON 303 Part B

SECTION I - PRODUCT/COMPOSITION

No.	Component	CAS Number	Percent
P	TROWELON 303 Part B	Mixture	100
1	Bisphenyl A/Epichlorohydrin Epoxy Resin	25068-38-6	
2	Epichlorohydrin	106-89-8	<5 PPM

SECTION II - SARA TITLE III INFORMATION

No.	EHS RQ (LBS) (*1)	EHS TPQ (LBS) (*2)	SEC 313 (*3)	313 CATEGORY (*4)	311/312 CATEGORIES (*5)
P					H-1
1					H-1
2	1000	1000	Yes		H-1

*1 = Reportable Quantity Of Extremely Hazardous Substance Sec. 302

*2 = Threshold Planning Quantity, Extremely Hazardous Substance, Sec. 302

*3 = Toxic Chemical, Sec. 313

*4 = Category As Required By Sec. 313 (40 CFR 372.65 C), Must Be On Toxic Release Form

*5 = Hazard Category For Sara Sec. 311/312 Reporting

Health H-1 = Immediate (Acute) Health Hazard

H-2 = Delayed (Chronic) Health Hazard

Physical P-3 = Fire Hazard

P-4 = Sudden Release Of Pressure Hazard

P-5 = Reactive Hazard

SECTION III -- ENVIRONMENTAL RELEASE INFORMATION

The reportable quantity (RQ) for this product is 20,000,000 LBS., which is based on the presence of component 1.

SECTION IV -- RCRA INFORMATION

If this product becomes a waste, it would be a hazardous waste (Hazardous waste number U041) by EPA - RCRA criteria (40 CFR 261.33), based on component 1. Refer to the latest EPA or state regulations regarding proper disposal.

The data in this Environmental Safety Data Sheet relates only to the specific material designated and does not relate to its use in combination with any other material or process. The data contained is believed to be correct. However since conditions of use are outside our control it should not be taken as a warranty or representation for which TROWELON, INC., assumes legal responsibility. This information is provided solely for your consideration, investigation, and verification.

MSDS's

Ethane

DATE: 1-15-96 (X) NEW () REVISED

5-94

(X) TECHNICAL () POWER PLANT
 (X) WWTP (X) STORES
 () LAB (X) #5/6 OFFICE
 (X) ROLL WRAP (X) #7 OFFICE
 (X) MAINTENANCE (X) #8 OFFICE
 (X) MATERIAL PREP

32/03

0002

JAN 11 '96 10:33 FR PETRO CANADA S
 01/10/98 WED 16:31 FAX 810 364 4712

Material Safety Data Sheet

May be used to comply with
 OSHA's Hazard Communication Standard,
 29 CFR 1910.1200. Standard must be
 consulted for specific requirements.

U.S. Department of Labor
 Occupational Safety and Health Administration
 (Non-Mandatory Form)
 Form Approved
 OMB No. 1218-0072



IDENTITY (As Used on Label and List)

PROpane (a liquidified petroleum gas)

Note: Blank spaces are not permitted. If any item is not applicable, or no
 information is available, the space must be marked to indicate that

Section I

Manufacturer's Name

St. Clair Underground Storage

Emergency Telephone Number

810-364-8100

Address (Number, Street, City, State, and ZIP Code)

Telephone Number for Information

810-364-8100

Date Prepared

May 18, 1994

Signature of Preparer (optional)

2510 Busha Highway
 Marysville, MI 48040

Section II — Hazardous Ingredients/Identity Information

Hazardous Components (Specific Chemical Identity; Common Name(s))	OSHA PEL	ACGIH TLV	Other Limits Recommended	% (optional)
CAS#				
Propane	74986	1000 ppm	95+%(liq vol)	
Ethane	74840	none (a simple asphyxiant)	3%	
Isobutane	75285	none listed	1%	
Propylene	115071	1000 ppm	1%	

Composition listed is approximate, but typical.

Ethanethiol (Ethyl Mercaptan) CAS# 75081 is added at concentrations of at least 1.5 lbs per
 10,000 gallons as the use of the propane requires.

Section III — Physical/Chemical Characteristics

Boiling Point	-50°	Specific Gravity (H ₂ O = 1) Compressed to Liquid	0.503
Vapor Pressure (mm Hg.) psig @ 100°F	190-208	Melting Point	-306°F
Vapor Density (AIR = 1)	1.5	Evaporation Rate (Butyl Acetate = 1)	A gas at normal temp. and pressure.

Solubility in Water

6.5 cc per 100 gms water at 64°F

Appearance and Odor Colorless gas; colorless, clear in liquid state; no significant odor unless
 specifically odorized to give typical "gas leak" odor.

Section IV — Fire and Explosion Hazard Data

Flash Point (Method Used)	-116°F	Flammable Limits Vol % in air	LEL 2.1%	UEL 9.5%
---------------------------	--------	----------------------------------	-------------	-------------

Extinguishing Media

Small fires: dry chemical or CO₂. Large fires: water spray fog or foam.

Special Fire Fighting Procedures

Let tank car, tank truck or storage tank burn unless leak can be stopped. With smaller tank
 or cylinders, extinguish/isolate from other flammables. When burning there is a danger of
 violent explosion as liquid in tank nears dryness.

Unusual Fire and Explosion Hazards

Extremely flammable; may be ignited by heat, sparks or flames.
 Vapors may travel to source of ignition and flash back. Container may explode in heat
 of fire. Vapor explosion hazard indoors, outdoors or in sewers.

(Reproduce locally)

OSHA 171-500-100

Propane

Section V — Reactivity Data

Stability	Unstable	X	Conditions to Avoid Heat, sparks or flames. Extremely flammable.
	Stable		

Incompatibility (Materials to Avoid)

Flame, ClO, oxidizing materials

Hazardous Decomposition or Byproducts

N/A

Hazardous Polymerization	May Occur	X	Conditions to Avoid N/A
	Will Not Occur		

Section VI — Health Hazard Data

Route(s) of Entry:	Inhalation?	Skin?	Ingestion?
Primarily inhalation of vapors.			
Health Hazards (Acute and Chronic)			
Vapors may cause dizziness or suffocation. Contact with evaporating liquid will cause severe frostbite. Fire may produce irritating or poisonous gases.			

Carcinogenicity:	NTP?	IARC Monographs?	OSHA Regulated?
None			

High concentrations have a central nervous system effect.

Signs and Symptoms of Exposure

Drowsiness, dizziness; an asphyxiant.

Medical Conditions

Generally Aggravated by Exposure

N/A

Emergency and First Aid Procedures Move victim to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call emergency medical care.

Keep victim quiet and maintain normal body temperature.

Section VII — Precautions for Safe Handling and Use

Steps to Be Taken in Case Material Is Released or Spilled

Shut off ignition sources: no flares, smoking or flames in hazard area. Do not touch spilled material. Stop leak if you can do it without risk. Isolate area and deny entry until gas has dispersed; if tank car or truck is involved, isolate 1/2-mile radius.

Waste Disposal Method

For very small amounts: controlled venting in outside air. For large amount: controlled burning in governmental air-pollution-control agency permitted facilities.

Precautions to Be Taken in Handling and Storing

Observe specific handling and safety precautions. Store away from sources of heat, sparks and flame. Store in extremely well-ventilated area or outdoors.

Other Precautions

Ventilate closed area which may contain vapors before entering them. Be aware that vapors may collect in low areas. On occasions odorized propane gas may lose its distinctive odor.

Section VIII — Control Measures

Respiratory Protection (Specify Type)

If exposure is necessary during emergency wear self-contained breathing apparatus.

Ventilation	Local Exhaust	Special	N/A
	Explosion-proof fans		
	Mechanical (General)	Other	N/A
	N/A		

Protective Gloves	Wear gloves to protect hands from valve leaks which can cause frostbite.	Eye Protection	Safety glasses or goggles.
-------------------	--	----------------	----------------------------

Other Protective Clothing or Equipment

N/A

Work/Hygienic Practices

Avoid routine inhalation exposure.

MSDS's

Ethylene Oxide



MATERIAL SAFETY DATA SHEET

EFFECTIVE DATE 07/12/94

Union Carbide urges each customer or recipient of this MSDS to study it carefully to become aware of and understand the hazards associated with the product. The reader should consider consulting reference works or individuals who are experts in dilution, toxicology, and fire prevention, as necessary or appropriate to use and understand the data contained in this MSDS.

To promote safe handling, each customer or recipient should: (1) notify its employees, agents, contractors and others whom it knows or believes will use this material or the information in this MSDS and any other information regarding hazards or safety; (2) furnish this same information to each of its customers for the product; and (3) request its customers to notify their employees, customers, and other users of the product of this information.

I. IDENTIFICATION

PRODUCT NAME: CARECOWAX SENTRY POLYETHYLENE GLYCOL 1450 NF, FCC GRADE CR
1450 FLAKE NF, FCC GRADE

CHEMICAL NAME: Polyethylene Glycol

Date _____ (☒ New () Revised

CHEMICAL FAMILY: Oxyalkylene Polymer

(☒) Technical () Maintenance
() Power Plant () WWTP
(☒) Lab (☒) #7 Office
(☒) #5/6 Office () #8 Office (☒) Main Gate
(☒) Material Prep (☒) Stores () Roll Wrap

FORMULA: HO-(CH₂CH₂O)_n-H

MOLECULAR WEIGHT: 1305-1535

SYNONYMS: Polyoxethylene 1450

CAS # AND NAME: See Section III, "Ingredients"

II. PHYSICAL DATA(Determined on Typical Material)

BOILING POINT, 760 mm Hg: >200 C (>392 F)

SPECIFIC GRAVITY(H₂O = 1): =1.102 at 55/20 C

FREEZING POINT: 47 C (117 F)

VAPOR PRESSURE AT 20°C: <0.01 mmHg

Copyright 1994, Union Carbide

CARBOWAX and SENTRY are Trademarks of Union Carbide

EMERGENCY PHONE NUMBERS: 1-800-UCC-HELP (NUMBER AVAILABLE AT ALL TIMES) OR (304) 744-3457

UNION CARBIDE CHEMICALS AND PLASTICS COMPANY INC
Industrial Chemicals Division
39 Old Ridgebury Road, Danbury, CT 06817-0001

EVAPORATION RATE (Butyl Acetate = 1): <0.01

VAPOR DENSITY (AIR = 1): >10

SOLUBILITY IN WATER by wt: 70% at 20 C

APPEARANCE: Transparent colorless
Above freezing point
White
Below freezing point

ODOR: Mild

PHYSICAL STATE: Liquid above freezing point
Solid below freezing point

III. INGREDIENTS

<u>%</u>	<u>MATERIAL</u>	<u>CAS#</u>	<u>EXPOSURE LIMIT</u>
100	Polyethylene Glycol	25322-68-3	None established

IV. FIRE AND EXPLOSION HAZARD DATA

FLASH POINT(test method(s)): 385 F (196 C)
Pensky-Martens Closed Cup ASTM D 93
500 F (260 C)
Cleveland Open Cup ASTM D 92

FLAMMABLE LIMITS IN AIR
% by volume: LOWER: Not Determined
UPPER: Not Determined

SPECIAL FIRE FIGHTING PROCEDURES:

Do not direct a solid stream of water or foam into hot, burning pools; this may cause frothing and increase fire intensity.
Use self-contained breathing apparatus and protective clothing.

EXTINGUISHING MEDIA:

Apply alcohol-type or all-purpose-type foam by manufacturer's recommended techniques for large fires. Use carbon dioxide or dry chemical media for small fires.

UNUSUAL FIRE AND
EXPLOSION HAZARDS:

See "Other Precautions" in Section IX.

V. HEALTH HAZARD DATA

EXPOSURE LIMIT(S):

None established by OSHA or ACGIH.

EFFECTS OF SINGLE OVEREXPOSURE:

SWALLOWING:

No evidence of harmful effects from available information.

SKIN ABSORPTION:

No evidence of harmful effects from available information.

INHALATION:

Short-term harmful health effects are not expected from vapor generated at ambient temperature.

SKIN CONTACT:

No evidence of harmful effects from available information.

EYE CONTACT:

No evidence of harmful effects from available information.

EFFECTS OF REPEATED OVEREXPOSURE:

Although this material is not a skin irritant, submersion by workers of unprotected skin in highly concentrated solutions of this material for prolonged periods of time could result in skin dehydration.

MEDICAL CONDITIONS AGGRAVATED BY OVEREXPOSURE:

A knowledge of the available toxicology information and of the physical and chemical properties of the material suggests that overexposure is unlikely to aggravate existing medical conditions.

SIGNIFICANT LABORATORY DATA WITH POSSIBLE RELEVANCE TO HUMAN
HEALTH HAZARD EVALUATION:

None currently known.

OTHER EFFECTS OF OVEREXPOSURE:

Overexposure to vapor generated at high temperatures may result in eye and respiratory tract irritation, dizziness, nausea and the inhalation of harmful amounts of material.

EMERGENCY AND FIRST AID PROCEDURES:

SWALLOWING:

No emergency care anticipated.

SKIN:

Wash skin with soap and water.

INHALATION:

No emergency care anticipated.

EYES:

Flush eyes thoroughly with water for several minutes. Remove contact lenses, if worn.

NOTES TO PHYSICIAN:

Toxicology studies have shown this or similar material to be of very low acute toxicity and nonirritating. There is no specific antidote. Treatment of overexposure should be directed at the control of symptoms and the clinical condition of the patient.

VI. REACTIVITY DATA

STABILITY: Stable

CONDITIONS TO AVOID: None known.

INCOMPATIBILITY (materials to avoid):

Normally unreactive; however, avoid strong bases at high temperatures, strong acids, strong oxidizing agents and materials reactive with hydroxyl compounds.

HAZARDOUS COMBUSTION OR DECOMPOSITION PRODUCTS:

Burning can produce the following products:

Carbon monoxide and/or carbon dioxide.

Carbon monoxide is highly toxic if inhaled; carbon dioxide in sufficient concentrations can act as an asphyxiant.

HAZARDOUS POLYMERIZATION: Will Not Occur

CONDITIONS TO AVOID: None known.

VII. SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED:

Collect for disposal.

WASTE DISPOSAL METHOD:

Incinerate in a furnace where permitted under Federal, State, and local regulations.

See Section IX, "Other Precautions."

VIII. SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION (specify type):

None should normally be necessary. If personnel experience respiratory discomfort or irritation, NIOSH approved half-mask respirator equipped with organic vapor cartridge and dust/mist pre-filter recommended.

VENTILATION:

General (mechanical) room ventilation is expected to be satisfactory.

PROTECTIVE GLOVES:

PVC-coated

EYE PROTECTION: Safety Glasses or Monogoggles

IER PROTECTIVE EQUIPMENT:
Eye Bath, Safety Shower

IX. SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE:

ATTENTION!
USE PRODUCT PROMPTLY AFTER OPENING.
AVOID PROLONGED EXPOSURE TO HEAT AND AIR.

FOR INDUSTRY USE ONLY

OTHER PRECAUTIONS:

Biodegradation - This material is resistant to rapid biodegradation. For this reason, incineration is the preferred method of disposal. This product may contain trace amounts of ethylene oxide (CAS No. 75-21-8), a condition which creates the potential for accumulation of ethylene oxide in the head space of shipping and storage containers and in enclosed areas where the product is being handled or used. Ethylene Oxide is considered by OSHA, IARC, and NTP as a potential carcinogen for humans. OSHA considers that, at excess levels, ethylene oxide may present reproductive, mutagenic, genotoxic, neurologic and sensitization hazards in humans. If this product is handled with adequate ventilation, the presence of these trace amounts is not expected to result in any short or long term hazard. This product may not be exempt for OSHA's ethylene oxide standard, 29CFR1910.1047. Users should comply with all applicable provisions. Personnel should be monitored to determine levels of exposure to ethylene oxide. If necessary, protective measures should be taken. The OSHA permissible exposure limit for ethylene oxide is 1 ppm TWA8, the action level is 0.5 ppm TWA8, the ACGIH TLV is 1 ppm TWA8 and OSHA has established an excursion limit of 5 ppm (15 minute average).

PROCESS HAZARD: Sudden release of hot organic chemical vapors or mists from process equipment operating at elevated temperature and pressure, or sudden ingress of air into vacuum equipment, may result in ignitions without the presence of obvious ignition sources. Published "autoignition" or "ignition" temperature values cannot be treated as safe operating temperatures in chemical processes without analysis of the actual process conditions.

Any use of this product in elevated-temperature processes should be thoroughly evaluated to establish and maintain safe operating conditions. Further information is available in a technical bulletin entitled "Ignition Hazards of Organic Chemical Vapors."

X. REGULATORY INFORMATION

STATUS ON SUBSTANCE LISTS:

The concentrations shown are maximum or ceiling levels (weight %) to be used for calculations for regulations. Trade Secrets are indicated by "TS".

FEDERAL EPA

Comprehensive Environmental Response Compensation, and Liability Act of 1980 (CERCLA) requires notification of the National Response Center of release of quantities of Hazardous Substances equal to or greater than the reportable quantities (RQs) in 40 CFR 302.4.

Components present in this product at a level which could require reporting under the statute are:

*** NONE ***

Superfund Amendments and Reauthorization Act of 1986 (SARA) Title III requires emergency planning based on Threshold Planning Quantities (TPQs) and release reporting based on Reportable Quantities (RQs) in 40 CFR 355 (used for SARA 302, 304, 311 and 312).

Components present in this product at a level which could require reporting under the statute are:

*** NONE ***

Superfund Amendments and Reauthorization Act of 1986 (SARA) Title III requires submission of annual reports of release of toxic chemicals that appear in 40 CFR 372 (for SARA 313). This information must be included in all MSDSs that are copied and distributed for this material.

Components present in this product at a level which could require reporting under the statute are:

*** NONE ***

Toxic Substances Control Act (TSCA) STATUS:

The ingredients of this product are on the TSCA inventory.

STATE RIGHT-TO-KNOW

CALIFORNIA Proposition 65

This product contains trace levels of ACETALDEHYDE, DIOXANE AND FORMALDEHYDE which the State of California has found to cause cancer and ETHYLENE OXIDE which the State of California has found to cause cancer, birth defects or other reproductive harm.

MASSACHUSETTS Right-To-Know, Substance List (MSL) Hazardous Substances and Extraordinarily Hazardous Substances on the MSL must be identified when present in products.

Components present in this product at a level which could require reporting under the statute are:

EXTRAORDINARILY HAZARDOUS SUBSTANCES ($\geq 0.0001\%$)

UPPER BOUND

CHEMICAL	CAS NUMBER	CONCENTRATION %
Acetaldehyde	75-07-0	.0006
Dioxane	123-91-1	.0005
Ethylene Oxide	75-21-8	.0005
Formaldehyde	50-00-0	.0004

PENNSYLVANIA Right-to-Know, Hazardous Substance List Hazardous Substances and Special Hazardous Substances on the List must be identified when present in products.

Components present in this product at a level which could require reporting under the statute are:

*** NONE ***

CALIFORNIA SCAQMD RULE 443.1 VOC'S:

Vapor Pressure at <0.01 mmHg at 20°C.

VOC 1 g/L

VOC 1 g/L less water and less exempted solvents

OTHER REGULATORY INFORMATION:

EPA Hazard Categories: NONE

NOTE —

The opinions expressed herein are those of qualified experts within Union Carbide. We believe that the information contained herein is current as of the date of this Material Safety Data Sheet. Since the use of this information and the conditions of the use of the product are not under the control of Union Carbide, it is the user's obligation to determine conditions of safe use of the product.

REVISED SECTIONS:

Revisions in this MSDS occurred in the following sections:

SECTION I - IDENTIFICATION

SECTION II - PHYSICAL DATA

SECTION IV - FIRE AND EXPLOSION

SECTION VI - REACTIVITY DATA

SECTION IX - SPECIAL PRECAUTIONS

SECTION X - REGULATORY INFORMATION

PRODUCT: 18289

F NUMBER: N0072D

MSDS's

Formaldehyde

DATE: 03/15/96
INDEX: D60742409

ACCT: 661585001
CAT NO: SB10420

PO NBR: PH 24464

PAGE: 1

**** MATERIAL SAFETY DATA SHEET ****

Buffer Solution pH 6.00
41126

**** SECTION 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION ****

MSDS Name: Buffer Solution pH 6.00

Catalog Numbers:

SB104 1, SB104 20, SB104 500

Synonyms:

Company Identification: Fisher Scientific
1 Reagent Lane
Fairlawn, NJ 07410

For information, call: 201-796-7100

Emergency Number: 201-796-7100

For CHEMTREC assistance, call: 800-424-9300

**** SECTION 2 - COMPOSITION, INFORMATION ON INGREDIENTS ****

CAS#	Chemical Name	%	Einecs#
67-56-1	Methyl alcohol	0.02	unlisted
1310-73-2	Sodium hydroxide	0.02	unlisted
7732-18-5	Water	Balance	unlisted
7778-77-0	Dihydrogen potassium phosphate	0.7	231-913-4

**** SECTION 3 - HAZARDS IDENTIFICATION ****

EMERGENCY OVERVIEW

Appearance: Liquid.
Target Organs: None.

Potential Health Effects

Eyes:

May cause eye irritation.

Skin:

May cause skin irritation.

Ingestion:

Causes gastrointestinal irritation with nausea, vomiting and diarrhea.

Inhalation:

May cause respiratory tract irritation.

Chronic:

Chronic inhalation and ingestion may cause effects similar to those of acute inhalation and ingestion.

**** SECTION 4 - FIRST AID MEASURES ****

Eyes:

Get medical aid.
Gently lift eyelids and flush continuously with water.

Skin:

Get medical aid if irritation develops or persists.
Flush skin with plenty of soap and water.

Ingestion:

If victim is conscious and alert, give 2-4 cupfuls of milk or water.

Inhalation:

Get medical aid immediately. Remove from exposure to fresh air immediately. If not breathing, give artificial respiration.

Notes to Physician:

Treat symptomatically and supportively.
None reported.

**** SECTION 5 - FIRE FIGHTING MEASURES ****

General Information:

As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear.

Extinguishing Media:

Substance is noncombustible; use agent most appropriate to extinguish surrounding fire.

Autoignition Temperature: Not applicable.

Flash Point: Not applicable.

Explosion Limits, Lower: Not available.
Upper: Not available.

**** SECTION 6 - ACCIDENTAL RELEASE MEASURES ****

General Information: Use proper personal protective equipment as indicated in Section 8.

DATE: 03/15/96
INDEX: D60742409

ACCT: 661585001
CAT NO: SB10420

PO NBR: PH 24464

PAGE: 2

Spills/Leaks:

Absorb spill with inert material, (e.g., dry sand or earth), then place into a chemical waste container.

**** SECTION 7 - HANDLING and STORAGE ****

Handling:

Use with adequate ventilation.
Avoid contact with eyes.
Keep container tightly closed.
Avoid ingestion and inhalation.

Storage:

Store in a cool, dry place.

**** SECTION 8 - EXPOSURE CONTROLS, PERSONAL PROTECTION ****

Engineering Controls:

Good general ventilation should be sufficient to control airborne levels.

Exposure Limits

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs
Methyl alcohol	200 ppm ; 262 mg/m3; 250 ppm STEL; 328 mg/m3 STEL	200 ppm TWA; 260 mg/m3 TWA; 250 ppm STEL; 325 mg/m3 STEL	200 ppm TWA; 260 mg/m3 TWA
Sodium hydroxide	C 2 mg/m3	C 2 mg/m3	2 mg/m3 TWA
Water	none listed	none listed	none listed
Dihydrogen potassium phosphate	none listed	none listed	none listed

OSHA Vacated PELs:

Methyl alcohol:
200 ppm TWA; 260 mg/m3 TWA; 250 ppm STEL; 325 mg/m3 STEL
Sodium hydroxide:
C 2 mg/m3
Water:
No OSHA Vacated PELs are listed for this chemical.
Dihydrogen potassium phosphate:
No OSHA Vacated PELs are listed for this chemical.

Personal Protective Equipment

Eyes:

Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133.

Skin:

Wear appropriate gloves to prevent skin exposure.

Clothing:

Wear appropriate protective clothing to minimize contact with skin.

Respirators:

Follow the OSHA respirator regulations found in 29CFR 1010.134. Always use a NIOSH-approved respirator when necessary.

**** SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES ****

Physical State: Liquid
Appearance: Liquid.
Odor: Not available.
pH: Not available.
Vapor Pressure: Not available.
Vapor Density: 0.7
Evaporation Rate: Not available.
Viscosity: Not available.
Boiling Point: 212 F
Freezing/Melting Point: Not available.
Decomposition Temperature: Not available.
Solubility: Soluble in water.
Specific Gravity/Density: Not available.
Molecular Formula: Mixture
Molecular Weight: Not available.

**** SECTION 10 - STABILITY AND REACTIVITY ****

Chemical Stability:

Stable.

Conditions to Avoid:

None reported.

Incompatibilities with Other Materials:

There is no information for any incompatibilities for this substance.

DATE: 3-22-96 (X) NEW () REVISED
(X) TECHNICAL () WWTP
() POWER PLANT () #7 OFFICE
(X) LAB () #8 OFFICE
() #5/6 OFFICE (X) STORES
() MATERIAL PREP () ROLL WRAP
() MAINTENANCE

DATE: 5/96
INDEX: 42409

ACCT: 661585001
CAT NO: SB10420

PO NBR: PH 24464

PAGE: 3

Hazardous Decomposition Products:

None.

Hazardous Polymerization: Has not been reported.

**** SECTION 11 - TOXICOLOGICAL INFORMATION ****

RTECS#:

CAS# 67-56-1: PC1400000
CAS# 1310-73-2: WB4900000
CAS# 7732-18-5: ZC0110000
CAS# 7778-77-0: unlisted.

LD50/LC50:

CAS# 1310-73-2.
CAS# 1310-73-2.
CAS# 1310-73-2.
CAS# 1310-73-2.

Carcinogenicity:

Methyl alcohol -
Not listed by ACGIH, IARC, NIOSH, NTP, or OSHA.
Sodium hydroxide -
Not listed by ACGIH, IARC, NIOSH, NTP, or OSHA.
Water -
Not listed by ACGIH, IARC, NIOSH, NTP, or OSHA.
Dihydrogen potassium phosphate -
Not listed by ACGIH, IARC, NIOSH, NTP, or OSHA.

Epidemiology:

No data available.

Teratogenicity:

No data available.

Reproductive Effects:

No data available.

Neurotoxicity:

No data available.

Mutagenicity:

No data available.

Other Studies:

No data available.

**** SECTION 12 - ECOLOGICAL INFORMATION ****

Ecotoxicity:

No information available.

Environmental Fate:

No information available.

Physical/Chemical:

No information available.

Physical/Chemical:

None.

**** SECTION 13 - DISPOSAL CONSIDERATIONS ****

Dispose of in a manner consistent with federal, state, and local regulations.

RCRA D-Series Maximum Concentration of Contaminants: Not listed.

RCRA D-Series Chronic Toxicity Reference Levels: Not listed.

RCRA F-Series: Not listed.

RCRA P-Series: Not listed.

RCRA U-Series: Not listed.

Not listed as a material banned from land disposal according to RCRA.

**** SECTION 14 - TRANSPORT INFORMATION ****

US DOT

No information available

IMO

No information available.

IATA

No information available.

RID/ADR

No information available.

Canadian TDG

No information available.

**** SECTION 15 - REGULATORY INFORMATION ****

A. Federal

TSCA

CAS# 67-56-1 is listed on the TSCA inventory.

CAS# 1310-73-2 is listed on the TSCA inventory.

CAS# 7732-18-5 is listed on the TSCA inventory.

CAS# 7778-77-0 is listed on the TSCA inventory.

Health & Safety Reporting List

None of the chemicals are on the Health & Safety Reporting List.

Chemical Test Rules

None of the chemicals in this product are under a Chemical Test Rule.

Section 12b

None of the chemicals are listed under TSCA Section 12b.

TSCA Significant New Use Rule

None of the chemicals in this material have a SNUR under TSCA.

CERCLA/SARA

DATE: 03/15/96
INDEX: D60742409

ACCT: 661585001
CAT NO: SB10420

PO NBR: PH 24464

PAGE: 4

Section 302 (RQ)

None of the chemicals in this material have an RQ.

Section 302 (TPQ)

None of the chemicals in this product have a TPQ.

Section 313

This chemical is not at a high enough concentration to be reportable under Section 313.

No chemicals are reportable under Section 313.

Clean Air Act:

CAS# 67-56-1 is listed as a hazardous air pollutant (HAP).

This material does not contain any Class 1 Ozone depleters.

This material does not contain any Class 2 Ozone depleters.

Clean Water Act:

CAS# 1310-73-2 is listed as a Hazardous Substance under the CWA.

None of the chemicals in this product are listed as Priority

Pollutants under the CWA.

None of the chemicals in this product are listed as Toxic Pollutants

under the CWA.

OSHA:

None of the chemicals in this product are considered highly hazardous by OSHA.

B. State

Methyl alcohol can be found on the following state right to know

lists: California, New Jersey, Florida, Pennsylvania, Minnesota,

Massachusetts.

Sodium hydroxide can be found on the following state right to know

lists: California, New Jersey, Florida, Pennsylvania, Minnesota,

Massachusetts.

Not present on state lists from CA, PA, MN, MA, FL, or NJ.

Not present on state lists from CA, PA, MN, MA, FL, or NJ.

California No Significant Risk Level:

None of the chemicals in this product are listed.

C. International

Canada

CAS# 67-56-1 is listed on Canada's DSL/NDSL List.

CAS# 1310-73-2 is listed on Canada's DSL/NDSL List.

CAS# 7732-18-5 is listed on Canada's DSL/NDSL List.

CAS# 7778-77-0 is listed on Canada's DSL/NDSL List.

CAS# 67-56-1 is listed on Canada's Ingredient Disclosure List.

CAS# 1310-73-2 is listed on Canada's Ingredient Disclosure List.

CAS# 7732-18-5 is not listed on Canada's Ingredient Disclosure List.

CAS# 7778-77-0 is not listed on Canada's Ingredient Disclosure List.

European Labeling in Accordance with EC Directives

Hazard Symbols: Not available.

Risk Phrases:

Safety Phrases:

Exposure Limits:

OEL-AUSTRALIA:TWA 2 mg/m3. OEL-BELGIUM:STEL 2 mg/m3. OEL-DENMARK:TWA 2

mg/m3. OEL-FINLAND:TWA 2 mg/m3. OEL-FRANCE:TWA 2 mg/m3

WA 2 mg/m3. OEL-JAPAN:STEL 2 mg/m3. OEL-THE NETHERLANDS:TWA 2 mg/m3

EL-THE PHILIPPINES:TWA 2 mg/m3. OEL-SWEDEN:TWA 2 mg/m3. OEL-SWITZERLAN

D:TWA 2 mg/m3. STEL 4 mg/m3. OEL-THAILAND:TWA 2 mg/m3. OEL-TURKEY:TWA 2

mg/m3. OEL-UNITED KINGDOM:TWA 2 mg/m3. STEL 2 mg/m3. OEL IN BULGARIA,

COLOMBIA, JORDAN, KOREA check ACGIH TLV. OEL IN NEW ZEALAND, SINGAPORE

, VIETNAM check ACGI TLV

**** SECTION 16 - ADDITIONAL INFORMATION ****

Additional Information:

No additional information available.

MSDS Creation Date: August 15, 1995

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes.

DATE: 02/04/97 ACCT: 661585001
INDEX: D70343773 CAT NO: SB10720 PO NBR: PH28092

PAGE: 1

**** MATERIAL SAFETY DATA SHEET ****

Buffer Solution pH 7.0 (Color-Coded Yellow)
41138

**** SECTION 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION ****

MSDS Name: Buffer Solution pH 7.0 (Color-Coded Yellow)
Catalog Numbers:
S71897, SB107 20, SB107 4, SB107 500, SB10720, SB1074, SB107500
Synonyms:
None
Company Identification: Fisher Scientific
1 Reagent Lane
Fairlawn, NJ 07410
For information, call: 201-796-7100
Emergency Number: 201-796-7100
For CHEMTREC assistance, call: 800-424-9300

**** SECTION 2 - COMPOSITION, INFORMATION ON INGREDIENTS ****

CAS#	Chemical Name	%	EINECS#
1310-73-2	Sodium hydroxide	0.1	215-185-5
7732-18-5	Water	Balance	231-791-2
7778-77-0	Dihydrogen potassium phosphate	0.7	231-913-4
Not avail.	Yellow Food Color	0.0-0.02	unlisted

**** SECTION 3 - HAZARDS IDENTIFICATION ****

EMERGENCY OVERVIEW

Appearance: Clear, colorless.
Caution! May cause irritation.
Target Organs: None.

Potential Health Effects

Eyes:
May cause mild eye irritation.
Skin:
Non-irritating to the skin. Low hazard for usual industrial handling.
Ingestion:
Low hazard for usual industrial handling. May cause gastrointestinal disturbances and electrolytic imbalance.
Inhalation:
May cause respiratory tract irritation. Low hazard for usual industrial handling.
Chronic:
No information found.

**** SECTION 4 - FIRST AID MEASURES ****

Eyes:
Get medical aid. Gently lift eyelids and flush continuously with water.
Skin:
Get medical aid if irritation develops or persists. Flush skin with plenty of soap and water.
Ingestion:
If victim is conscious and alert, give 2-4 cupfuls of milk or water. Get medical aid.
Inhalation:
Get medical aid immediately. Remove from exposure to fresh air immediately. If not breathing, give artificial respiration.
Notes to Physician:
Treat symptomatically and supportively.
None reported.

**** SECTION 5 - FIRE FIGHTING MEASURES ****

General Information:
As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear.
Extinguishing Media:
Substance is noncombustible; use agent most appropriate to extinguish surrounding fire.
Autoignition Temperature: Not applicable.
Flash Point: Not applicable.
NFPA Rating: Not published.
Explosion Limits, Lower: Not available.
Upper: Not available.

**** SECTION 6 - ACCIDENTAL RELEASE MEASURES ****

DATE: 2-10-97 () NEW () REVISED

(X) TECHNICAL (X) WWTP
() POWER PLANT () #7 OFFICE
(X) LAB () #8 OFFICE
() #5/6 OFFICE (X) STORES
() MATERIAL PREP () ROLL WRAP
() MAINTENANCE

DATE: 02/04/97 ACCT: 661585001
INDEX: D70343773 CAT NO: SB10720 PO NBR: PH28092

PAGE: 2

General Information: Use proper personal protective equipment as indicated in Section 8.

Spills/Leaks:
Absorb spill with inert material, (e.g., dry sand or earth), then place into a chemical waste container.

**** SECTION 7 - HANDLING and STORAGE ****

Handling:
Use with adequate ventilation. Avoid contact with eyes. Keep container tightly closed.

Storage:
Store in a cool, dry place.

**** SECTION 8 - EXPOSURE CONTROLS, PERSONAL PROTECTION ****

Engineering Controls:
Good general ventilation should be sufficient to control airborne levels.

Exposure Limits

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs
Sodium hydroxide	C 2 mg/m3	C 2 mg/m3	2 mg/m3 TWA
Water	none listed	none listed	none listed
Dihydrogen potassium phosphate	none listed	none listed	none listed

OSHA Vacated PELs:

Sodium hydroxide:
C 2 mg/m3
Water:
No OSHA Vacated PELs are listed for this chemical.
Dihydrogen potassium phosphate:
No OSHA Vacated PELs are listed for this chemical.

Personal Protective Equipment

Eyes:
Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133.
Skin:
Protective garments not normally required.
Clothing:
Protective garments not normally required.
Respirators:
Follow the OSHA respirator regulations found in 29CFR 1910.134. Always use a NIOSH-approved respirator when necessary.

**** SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES ****

Physical State: Liquid
Appearance: Clear, colorless
Odor: None
pH: 7.00 @ 25C
Vapor Pressure: 760 mm Hg @ 20C
Vapor Density: Not available.
Evaporation Rate: Not available.
Viscosity: Not available.
Boiling Point: 212 F
Freezing/Melting Point: 32 F
Decomposition Temperature: Not available.
Solubility: Soluble in water
Specific Gravity/Density: 1.0
Molecular Formula: Mixture
Molecular Weight: Not available.

**** SECTION 10 - STABILITY AND REACTIVITY ****

Chemical Stability:
Stable.
Conditions to Avoid:
None reported.
Incompatibilities with Other Materials:
There is no information for any incompatibilities for this substance.
Hazardous Decomposition Products:
None.
Hazardous Polymerization: Has not been reported.

**** SECTION 11 - TOXICOLOGICAL INFORMATION ****

RTCS#:

CAS# 1310-73-2: WB4900000
CAS# 7732-18-5: ZC0110000
CAS# 7778-77-0 unlisted.
LD50/LC50:
CAS# 7732-18-5: Oral, rat: LD50 = 90 mL/kg.
CAS# 7732-18-5: Oral, rat: LD50 = 90 mL/kg.
CAS# 7732-18-5: Oral, rat: LD50 = 90 mL/kg.
Carcinogenicity:
Sodium hydroxide -
Not listed by ACGIH, IARC, NIOSH, NTP, or OSHA.
Water -
Not listed by ACGIH, IARC, NIOSH, NTP, or OSHA.
Dihydrogen potassium phosphate -
Not listed by ACGIH, IARC, NIOSH, NTP, or OSHA.
Epidemiology:
No data available.
Teratogenicity:
No data available.
Reproductive Effects:
No data available.
Neurotoxicity:
No data available.
Mutagenicity:
No data available.
Other Studies:
No data available.

**** SECTION 12 - ECOLOGICAL INFORMATION ****

Ecotoxicity:
No information available.
Environmental Fate:
No information reported.
Physical/Chemical:
No information available.
Other:
None.

**** SECTION 13 - DISPOSAL CONSIDERATIONS ****

Dispose of in a manner consistent with federal, state, and local regulations.
RCRA D-Series Maximum Concentration of Contaminants: Not listed.
RCRA D-Series Chronic Toxicity Reference Levels: Not listed.
RCRA F-Series: Not listed.
RCRA P-Series: Not listed.
RCRA U-Series: Not listed.
Not listed as a material banned from land disposal according to RCRA.

**** SECTION 14 - TRANSPORT INFORMATION ****

US DOT
No information available
IMO
No information available.
IATA
No information available.
RID/ADR
No information available.
Canadian TDG
No information available.

**** SECTION 15 - REGULATORY INFORMATION ****

A. Federal
TSCA
CAS# 1310-73-2 is listed on the TSCA inventory.
CAS# 7732-18-5 is listed on the TSCA inventory.
CAS# 7778-77-0 is listed on the TSCA inventory.
Health & Safety Reporting List
None of the chemicals are on the Health & Safety Reporting List.
Chemical Test Rules
None of the chemicals in this product are under a Chemical Test Rule.
Section 12b
None of the chemicals are listed under TSCA Section 12b.
TSCA Significant New Use Rule
None of the chemicals in this material have a SNUR under TSCA.
SARA
Section 302 (RQ)
final RQ = 1000 pounds (454 kg)
Section 302 (TPQ)
None of the chemicals in this product have a TPQ.
SARA Codes
CAS # 1310-73-2: acute, reactive.
CAS # 7778-77-0: acute.
Section 313
No chemicals are reportable under Section 313.
Clean Air Act:
This material does not contain any hazardous air pollutants.
This material does not contain any Class 1 Ozone depleters.

This material does not contain any Class 2 Ozone depleters.
Clean Water Act:
CAS# 1310-73-2 is listed as a Hazardous Substance under the CWA.
None of the chemicals in this product are listed as Priority
Pollutants under the CWA.
None of the chemicals in this product are listed as Toxic Pollutants
under the CWA.
OSHA:
None of the chemicals in this product are considered highly hazardous
by OSHA.

B. State
Sodium hydroxide can be found on the following state right to know
lists: California, New Jersey, Florida, Pennsylvania, Minnesota,
Massachusetts.
Not present on state lists from CA, PA, MN, MA, FL, or NJ.
Not present on state lists from CA, PA, MN, MA, FL, or NJ.
California No Significant Risk Level:
None of the chemicals in this product are listed.

C. International
Canada
CAS# 1310-73-2 is listed on Canada's DSL/NDL List.
CAS# 7732-18-5 is listed on Canada's DSL/NDL List.
CAS# 7778-77-0 is listed on Canada's DSL/NDL List.
CAS# 1310-73-2 is listed on Canada's Ingredient Disclosure List.
CAS# 7732-18-5 is not listed on Canada's Ingredient Disclosure List.
CAS# 7778-77-0 is not listed on Canada's Ingredient Disclosure List.
European Labeling in Accordance with EC Directives
Hazard Symbols: Not available.
Risk Phrases:
Safety Phrases:
S 24/25 Avoid contact with skin and eyes.

Exposure Limits:
OEL-AUSTRALIA:TWA 2 mg/m3. OEL-BELGIUM:STEL 2 mg/m3. OEL-DENMARK:TWA 2
mg/m3. OEL-FINLAND:TWA 2 mg/m3. OEL-FRANCE:TWA 2 mg/m3
WA 2 mg/m3. OEL-JAPAN:STEL 2 mg/m3. OEL-THE NETHERLANDS:TWA 2 mg/m3
EL-THE PHILIPPINES:TWA 2 mg/m3. OEL-SWEDEN:TWA 2 mg/m3. OEL-SWITZERLAN
D:TWA 2 mg/m3;STEL 4 mg/m3. OEL-THAILAND:TWA 2 mg/m3. OEL-TURKEY:TWA 2
mg/m3. OEL-UNITED KINGDOM:TWA 2 mg/m3;STEL 2 mg/m3. OEL IN BULGARIA,
COLOMBIA, JORDAN, KOREA check ACGIH TLV. OEL IN NEW ZEALAND, SINGAPORE
, VIETNAM check ACGI TLV

**** SECTION 16 - ADDITIONAL INFORMATION ****

Additional Information:
No additional information available.
MSDS Creation Date: 2/10/1995 Revision #4 Date: 11/06/1996

The information above is believed to be accurate and represents the best
information currently available to us. However, we make no warranty of
merchantability or any other warranty, express or implied, with respect to
such information, and we assume no liability resulting from its use. Users
should make their own investigations to determine the suitability of the
information for their particular purposes. In no way shall Fisher be liable
for any claims, losses, or damages of any third party or for lost profits
or any special, indirect, incidental, consequential or exemplary
damages, howsoever arising, even if Fisher has been advised of
the possibility of such damages.

DATE: 08/15/91
INDEX: 05912250749

ACCT: 661585-01
CAT NO: SB10420

PAGE: 1
PO NBR: PH6554

~~**BUFFER SOLUTION (PH 6.00)**~~
~~**BUFFER SOLUTION (PH 6.00)**~~
~~**BUFFER SOLUTION (PH 6.00)**~~

MATERIAL SAFETY DATA SHEET

FISHER SCIENTIFIC
CHEMICAL DIVISION
1 REAGENT LANE
FAIR LAWN NJ 07410
(201) 796-7100

EMERGENCY NUMBER: (201) 796-7100
CHEMTREC ASSISTANCE: (800) 424-9300

THIS INFORMATION IS BELIEVED TO BE ACCURATE AND REPRESENTS THE BEST INFORMATION CURRENTLY AVAILABLE TO US. HOWEVER, WE MAKE NO WARRANTY OF MERCHANTABILITY OR ANY OTHER WARRANTY, EXPRESS OR IMPLIED, WITH RESPECT TO SUCH INFORMATION, AND WE ASSUME NO LIABILITY RESULTING FROM ITS USE. USERS SHOULD MAKE THEIR OWN INVESTIGATIONS TO DETERMINE THE SUITABILITY OF THE INFORMATION FOR THEIR PARTICULAR PURPOSES.

SUBSTANCE IDENTIFICATION

SUBSTANCE: **BUFFER SOLUTION (PH 6.00)**

TRADE NAMES/SYNONYMS:
SB104; ACC41126

CERCLA RATINGS (SCALE 0-3): HEALTH=0 FIRE=0 REACTIVITY=0 PERSISTENCE=0
NFPA RATINGS (SCALE 0-4): HEALTH=0 FIRE=0 REACTIVITY=0

COMPONENTS AND CONTAMINANTS

COMPONENT: POTASSIUM PHOSHPATE MONOBASIC CAS# 7778-77-0	PERCENT: 0.7
COMPONENT: SODIUM HYDROXIDE CAS# 1310-73-2	PERCENT: 0.02
COMPONENT: FORMALDEHYDE CAS# 50-00-0	PERCENT: 0.05
COMPONENT: METHYL ALCOHOL CAS# 67-56-1	PERCENT: 0.02
COMPONENT: WATER	PERCENT: 99.21
OTHER CONTAMINANTS: NONE	

EXPOSURE LIMITS:
NO OCCUPATIONAL EXPOSURE LIMITS ESTABLISHED BY OSHA, ACGIH, OR NIOSH.

PHYSICAL DATA

DESCRIPTION: LIQUID. BOILING POINT: 212 F (100 C) (APPROX.)
MELTING POINT: 32 F (0 C) (APPROX.) SPECIFIC GRAVITY: NOT AVAILABLE
SOLUBILITY IN WATER: SOLUBLE VAPOR DENSITY: 0.7

FIRE AND EXPLOSION DATA

FIRE AND EXPLOSION HAZARD:
NEGLECTIBLE FIRE HAZARD WHEN EXPOSED TO HEAT OR FLAME.

FIREFIGHTING MEDIA:
EXTINGUISH USING AGENT SUITABLE FOR TYPE OF SURROUNDING FIRE.

FIREFIGHTING:
NO ACUTE HAZARD. MOVE CONTAINER FROM FIRE AREA IF POSSIBLE. AVOID BREATHING VAPORS OR DUSTS; KEEP UPWIND.

TOXICITY

CARCINOGEN STATUS: NONE.
ACUTE TOXICITY LEVEL: NO DATA AVAILABLE.
TARGET EFFECTS: NO DATA AVAILABLE.

HEALTH EFFECTS AND FIRST AID

INHALATION:
ACUTE EXPOSURE- THIS SOLUTION HAS NOT BEEN TESTED. HOWEVER, NO HAZARDOUS EFFECTS ARE EXPECTED DUE TO THE LOW CONCENTRATION OF THE COMPONENT(S).
CHRONIC EXPOSURE- NO DATA AVAILABLE.

DATE: 08/15/91
INDE: 5912250749

ACCT: 661585-01
CAT NO: SB10420

PAGE: 2
PO NBR: PH6554

FIRST AID- IS UNLIKELY THAT EMERGENCY TREATMENT WILL BE REQUIRED. IF ADVERSE EFFECTS OCCUR, REMOVE FROM EXPOSURE, TREAT SYMPTOMATICALLY AND SUPPORTIVELY, AND GET MEDICAL ATTENTION.

SKIN CONTACT:

ACUTE EXPOSURE- THIS SOLUTION HAS NOT BEEN TESTED. HOWEVER, NO HAZARDOUS EFFECTS ARE EXPECTED DUE TO THE LOW CONCENTRATION OF THE COMPONENT(S).
CHRONIC EXPOSURE- NO DATA AVAILABLE.

FIRST AID- IT IS UNLIKELY THAT EMERGENCY TREATMENT WILL BE REQUIRED. IF ADVERSE EFFECTS OCCUR, WASH WITH LARGE AMOUNTS OF WATER AND SOAP AND GET MEDICAL ATTENTION.

EYE CONTACT:

ACUTE EXPOSURE- THIS SOLUTION HAS NOT BEEN TESTED. HOWEVER, NO HAZARDOUS EFFECTS ARE EXPECTED DUE TO THE LOW CONCENTRATION OF THE COMPONENT(S).
CHRONIC EXPOSURE- NO DATA AVAILABLE.

FIRST AID- IT IS UNLIKELY THAT EMERGENCY TREATMENT WILL BE REQUIRED. IF ADVERSE EFFECTS OCCUR, WASH WITH WATER OR NORMAL SALINE AND GET MEDICAL ATTENTION.

INGESTION:

ACUTE EXPOSURE- THIS SOLUTION HAS NOT BEEN TESTED. HOWEVER, NO HAZARDOUS EFFECTS ARE EXPECTED DUE TO THE LOW CONCENTRATION OF THE COMPONENT(S).
CHRONIC EXPOSURE- NO DATA AVAILABLE.

FIRST AID- IT IS UNLIKELY THAT EMERGENCY TREATMENT WILL BE REQUIRED. IF ADVERSE EFFECTS OCCUR, TREAT SYMPTOMATICALLY AND SUPPORTIVELY AND GET MEDICAL ATTENTION.

ANTIDOTE:

NO SPECIFIC ANTIDOTE. TREAT SYMPTOMATICALLY AND SUPPORTIVELY.

REACTIVITY

REACTIVITY:

STABLE UNDER NORMAL TEMPERATURES AND PRESSURES.

INCOMPATIBILITIES:

BUFFER SOLUTION (PH 6.00):
NO DATA AVAILABLE.

DECOMPOSITION:

THERMAL DECOMPOSITION MAY RELEASE TOXIC AND/OR HAZARDOUS GASES.

POLYMERIZATION:

HAZARDOUS POLYMERIZATION HAS NOT BEEN REPORTED TO OCCUR UNDER NORMAL TEMPERATURES AND PRESSURES.

STORAGE AND DISPOSAL

OBSERVE ALL FEDERAL, STATE AND LOCAL REGULATIONS WHEN STORING OR DISPOSING OF THIS SUBSTANCE. FOR ASSISTANCE, CONTACT THE DISTRICT DIRECTOR OF THE ENVIRONMENTAL PROTECTION AGENCY.

STORAGE

CONDITIONS TO AVOID

NO REPORTS FOUND.

SPILL AND LEAK PROCEDURES

OCCUPATIONAL SPILL:

SOAK UP SPILL WITH VERMICULITE OR OTHER ABSORBENT MATERIAL AND PLACE INTO SUITABLE CONTAINERS FOR LATER DISPOSAL.

PROTECTIVE EQUIPMENT

VENTILATION:

PROVIDE GENERAL DILUTION VENTILATION.

RESPIRATOR:

THE FOLLOWING RESPIRATORS ARE RECOMMENDED BASED ON INFORMATION FOUND IN THE PHYSICAL DATA, TOXICITY AND HEALTH EFFECTS SECTIONS. THEY ARE RANKED IN ORDER FROM MINIMUM TO MAXIMUM RESPIRATORY PROTECTION.
THE SPECIFIC RESPIRATOR SELECTED MUST BE BASED ON CONTAMINATION LEVELS FOUND IN THE WORK PLACE, MUST BE BASED ON THE SPECIFIC OPERATION, MUST NOT EXCEED THE WORKING LIMITS OF THE RESPIRATOR AND MUST BE JOINTLY APPROVED BY THE NATIONAL INSTITUTE FOR OCCUPATIONAL SAFETY AND HEALTH AND THE MINE SAFETY AND HEALTH ADMINISTRATION (NIOSH-MSHA).

DATE: 08/15/91
INDEX: 05912250749

ACCT: 661585-01
CAT NO: SB10420

PAGE: 3
PO NBR: PH6554

BASED ON THE COMPONENTS PRESENT AND/OR INFORMATION IN PHYSICAL DATA, HEALTH EFFECTS OR TOXICITY SECTIONS, NO RESPIRATOR WOULD BE REQUIRED UNDER THE NORMAL CONDITIONS OF USE. HOWEVER, AIR CONTAMINATION MONITORING SHOULD BE CARRIED OUT TO ASSURE THAT THE EMPLOYEES ARE NOT EXPOSED TO HARMFUL CONCENTRATIONS OF ANY OF THE ABOVE MENTIONED COMPONENTS. IF RESPIRATORY PROTECTION IS REQUIRED, IT MUST BE BASED ON THE CONTAMINATION LEVELS FOUND IN THE WORKPLACE, MUST NOT EXCEED THE WORKING LIMITS OF THE RESPIRATOR AND BE JOINTLY APPROVED BY THE NATIONAL INSTITUTE FOR OCCUPATIONAL SAFETY AND HEALTH AND THE MINE SAFETY AND HEALTH ADMINISTRATION (NIOSH-MSHA).

FOR FIREFIGHTING AND OTHER IMMEDIATELY DANGEROUS TO LIFE OR HEALTH CONDITIONS:

ANY SELF-CONTAINED BREATHING APPARATUS THAT HAS A FULL FACEPIECE AND IS OPERATED IN A PRESSURE-DEMAND OR OTHER POSITIVE-PRESSURE MODE.

ANY SUPPLIED-AIR RESPIRATOR THAT HAS A FULL FACEPIECE AND IS OPERATED IN A PRESSURE-DEMAND OR OTHER POSITIVE-PRESSURE MODE IN COMBINATION WITH AN AUXILIARY SELF-CONTAINED BREATHING APPARATUS OPERATED IN PRESSURE-DEMAND OR OTHER POSITIVE-PRESSURE MODE.

CLOTHING:
PROTECTIVE CLOTHING NOT REQUIRED. AVOID REPEATED OR PROLONGED CONTACT WITH THIS SUBSTANCE.

GLOVES:
PROTECTIVE GLOVES ARE NOT REQUIRED BUT RECOMMENDED.

EYE PROTECTION:
EMPLOYEE MUST WEAR SPLASH-PROOF OR DUST-RESISTANT SAFETY GOGGLES TO PREVENT EYE CONTACT WITH THIS SUBSTANCE.

EMERGENCY EYE WASH: WHERE THERE IS ANY POSSIBILITY THAT AN EMPLOYEE'S EYES MAY BE EXPOSED TO THIS SUBSTANCE, THE EMPLOYER SHOULD PROVIDE AN EYE WASH FOUNTAIN WITHIN THE IMMEDIATE WORK AREA FOR EMERGENCY USE.

AUTHORIZED - FISHER SCIENTIFIC, INC.
CREATION DATE: 01/31/91 REVISION DATE: 02/21/91

-ADDITIONAL INFORMATION-
THIS INFORMATION IS BELIEVED TO BE ACCURATE AND REPRESENTS THE BEST INFORMATION CURRENTLY AVAILABLE TO US. HOWEVER, WE MAKE NO WARRANTY OF MERCHANTABILITY OR ANY OTHER WARRANTY, EXPRESS OR IMPLIED, WITH RESPECT TO SUCH INFORMATION, AND WE ASSUME NO LIABILITY RESULTING FROM ITS USE. USERS SHOULD MAKE THEIR OWN INVESTIGATIONS TO DETERMINE THE SUITABILITY OF THE INFORMATION FOR THEIR PARTICULAR PURPOSES.

DATE: 01/30/90
INDEX: 05900290327

ACCT: 661585-01
CAT NO: SB101500

PAGE: 1
PO NBR: PH00680

***BUFFER SOLUTIONS (PH 3.00, 4.00, 5.00)**
***BUFFER SOLUTIONS (PH 3.00, 4.00, 5.00)**
***BUFFER SOLUTIONS (PH 3.00, 4.00, 5.00)**

MATERIAL SAFETY DATA SHEET

FISHER SCIENTIFIC
CHEMICAL DIVISION
1 REAGENT LANE
FAIR LAWN NJ 07410
(201) 796-7100

EMERGENCY NUMBER: (201) 796-7100
CHEMTREC ASSISTANCE: (800) 424-9300

THIS INFORMATION IS BELIEVED TO BE ACCURATE AND REPRESENTS THE BEST INFORMATION CURRENTLY AVAILABLE TO US. HOWEVER, WE MAKE NO WARRANTY OF MERCHANTABILITY OR ANY OTHER WARRANTY, EXPRESS OR IMPLIED, WITH RESPECT TO SUCH INFORMATION, AND WE ASSUME NO LIABILITY RESULTING FROM ITS USE. USERS SHOULD MAKE THEIR OWN INVESTIGATIONS TO DETERMINE THE SUITABILITY OF THE INFORMATION FOR THEIR PARTICULAR PURPOSES.

SUBSTANCE IDENTIFICATION

SUBSTANCE: ***BUFFER SOLUTIONS (PH 3.00, 4.00, 5.00)**

TRADE NAMES/SYNONYMS:
SB-97; SB-98; SB-101; SB-99; SB-102; ACC03486

CERCLA RATINGS (SCALE 0-3): HEALTH=0 FIRE=0 REACTIVITY=0 PERSISTENCE=0
NFPA RATINGS (SCALE 0-4): HEALTH=0 FIRE=0 REACTIVITY=0

COMPONENTS AND CONTAMINANTS

COMPONENT: HYDROCHLORIC ACID CAS# 7647-01-0	PERCENT: <0.1
COMPONENT: POTASSIUM HYDROGEN PHTHALATE CAS# 877-24-7	PERCENT: >1
COMPONENT: FORMALDEHYDE CAS# 50-00-0	PERCENT: 0.04
COMPONENT: SODIUM HYDROXIDE CAS# 1310-73-2	PERCENT: 0.05
COMPONENT: WATER	PERCENT: 99

OTHER CONTAMINANTS: NONE

EXPOSURE LIMITS:
NO OCCUPATIONAL EXPOSURE LIMITS ESTABLISHED BY OSHA, ACGIH, OR NIOSH.

THIS SUBSTANCE OR ITS COMPONENT(S) IS SUBJECT TO CALIFORNIA PROPOSITION 65
CANCER AND/OR REPRODUCTIVE TOXICITY WARNING AND RELEASE REQUIREMENTS.

PHYSICAL DATA

DESCRIPTION: CLEAR COLORLESS LIQUID (MAY BE COLOR CODED ACCORDING TO PH
AND MAY VARY WITH MANUFACTURER)

BOILING POINT: 212 F (100 C) MELTING POINT: 32 F (0 C)
SPECIFIC GRAVITY: 1.0 VAPOR PRESSURE: 14 MMHG @ 20 C (H2O)
EVAPORATION RATE: (ETHER=1) >1 PH: 3, 4, OR 5
SOLUBILITY IN WATER: COMPLETE VAPOR DENSITY: 0.7 (WATER)

FIRE AND EXPLOSION DATA

FIRE AND EXPLOSION HAZARD:
NEGLECTIBLE FIRE HAZARD WHEN EXPOSED TO HEAT OR FLAME.

FLASH POINT: NOT APPLICABLE

FIREFIGHTING MEDIA:
DRY CHEMICAL, CARBON DIOXIDE, HALON, WATER SPRAY OR STANDARD FOAM
(1987 EMERGENCY RESPONSE GUIDEBOOK, DOT P 5800.4).

FOR LARGER FIRES, USE WATER SPRAY, FOG OR STANDARD FOAM
(1987 EMERGENCY RESPONSE GUIDEBOOK, DOT P 5800.4).

REFIGHTING:
ACUTE HAZARD. MOVE CONTAINER FROM FIRE AREA IF POSSIBLE. AVOID BREATHING
GASES OR DUSTS; KEEP UPWIND.

DATE: 01/30/90
INDEX: 05900290327

ACCT: 661585-01
CAT NO: SB101500

PAGE: 2
PO NBR: PH00680

TOXICITY

POTASSIUM HYDROGEN PHTHALATE:
CARCINOGEN STATUS: NONE.

POTASSIUM HYDROGEN PHTHALATE IS A MILD EYE, MUCOUS MEMBRANE, RESPIRATORY TRACT
AND SKIN IRRITANT.

HEALTH EFFECTS AND FIRST AID

INHALATION:

POTASSIUM HYDROGEN PHTHALATE:
IRRITANT.

ACUTE EXPOSURE- MAY CAUSE IRRITATION.

CHRONIC EXPOSURE- REPEATED OR PROLONGED EXPOSURE MAY CAUSE IRRITATION.

FIRST AID- REMOVE FROM EXPOSURE AREA TO FRESH AIR IMMEDIATELY. IF BREATHING
HAS STOPPED, PERFORM ARTIFICIAL RESPIRATION. KEEP PERSON WARM AND AT REST.
TREAT SYMPTOMATICALLY AND SUPPORTIVELY. GET MEDICAL ATTENTION IMMEDIATELY.

SKIN CONTACT:

POTASSIUM HYDROGEN PHTHALATE:
IRRITANT.

ACUTE EXPOSURE- MAY CAUSE IRRITATION.

CHRONIC EXPOSURE- REPEATED OR PROLONGED CONTACT MAY CAUSE DERMATITIS.

FIRST AID- REMOVE CONTAMINATED CLOTHING AND SHOES IMMEDIATELY. WASH AFFECTED
AREA WITH SOAP OR MILD DETERGENT AND LARGE AMOUNTS OF WATER UNTIL NO
EVIDENCE OF CHEMICAL REMAINS (AT LEAST 15-20 MINUTES). IN CASE OF CHEMICAL
BURNS, COVER AREA WITH STERILE, DRY DRESSING. BANDAGE SECURELY, BUT NOT
TOO TIGHTLY. GET MEDICAL ATTENTION IMMEDIATELY.

EYE CONTACT:

POTASSIUM HYDROGEN PHTHALATE:
IRRITANT.

ACUTE EXPOSURE- DIRECT CONTACT MAY CAUSE IRRITATION, REDNESS, AND PAIN.

CHRONIC EXPOSURE- REPEATED OR PROLONGED EXPOSURE MAY CAUSE CONJUNCTIVITIS.

FIRST AID- WASH EYES IMMEDIATELY WITH LARGE AMOUNTS OF WATER OR NORMAL SALINE,
OCCASIONALLY LIFTING UPPER AND LOWER LIDS, UNTIL NO EVIDENCE OF CHEMICAL
REMAINS (APPROXIMATELY 15-20 MINUTES). GET MEDICAL ATTENTION IMMEDIATELY.

INGESTION:

POTASSIUM HYDROGEN PHTHALATE:
IRRITANT.

ACUTE EXPOSURE- MAY CAUSE NAUSEA, VOMITING, AND DIARRHEA.

CHRONIC EXPOSURE- NOT REPORTED TO OCCUR IN HUMANS.

FIRST AID- IF VICTIM IS CONSCIOUS, IMMEDIATELY GIVE 2 TO 4 GLASSES OF WATER,
AND INDUCE VOMITING BY TOUCHING FINGER TO BACK OF THROAT. GET MEDICAL
ATTENTION IMMEDIATELY.

ANTIDOTE:

NO SPECIFIC ANTIDOTE. TREAT SYMPTOMATICALLY AND SUPPORTIVELY.

REACTIVITY

REACTIVITY:

STABLE UNDER NORMAL TEMPERATURES AND PRESSURES.

INCOMPATIBILITIES:

NONE KNOWN.

DECOMPOSITION:

THERMAL DECOMPOSITION MAY RELEASE ACRID SMOKE AND IRRITATING FUMES.

POLYMERIZATION:

HAZARDOUS POLYMERIZATION HAS NOT BEEN REPORTED TO OCCUR UNDER NORMAL
TEMPERATURES AND PRESSURES.

CONDITIONS TO AVOID

NO REPORTS FOUND.

SPILL AND LEAK PROCEDURES

WATER SPILL:

THE CALIFORNIA SAFE DRINKING WATER AND TOXIC ENFORCEMENT ACT OF 1986
(POSITION 65) PROHIBITS CONTAMINATING ANY KNOWN SOURCE OF DRINKING WATER
SUBSTANCES KNOWN TO CAUSE CANCER AND/OR REPRODUCTIVE TOXICITY.

NONWATER SPILL:

ABSORB WITH VERMICULITE OR OTHER SUITABLE MATERIAL. PLACE IN A SUITABLE
CONTAINER (PLASTIC OR METAL), FOR LATER DISPOSAL.

DATE: 01/30/90
INDEX: 05900290327

ACCT: 661585-01
CAT NO: SB101500

PO NBR: PH00680

PROTECTIVE EQUIPMENT

VENTILATION:
PROVIDE GENERAL DILUTION VENTILATION.

RESPIRATOR:
THE FOLLOWING RESPIRATORS ARE RECOMMENDED BASED ON INFORMATION FOUND IN THE PHYSICAL DATA, TOXICITY AND HEALTH EFFECTS SECTIONS. THEY ARE RANKED IN ORDER FROM MINIMUM TO MAXIMUM RESPIRATORY PROTECTION. THE SPECIFIC RESPIRATOR SELECTED MUST BE BASED ON CONTAMINATION LEVELS FOUND IN THE WORK PLACE, MUST NOT EXCEED THE WORKING LIMITS OF THE RESPIRATOR AND BE JOINTLY APPROVED BY THE NATIONAL INSTITUTE FOR OCCUPATIONAL SAFETY AND HEALTH AND THE MINE SAFETY AND HEALTH ADMINISTRATION (NIOSH-MSHA).

ANY SUPPLIED-AIR RESPIRATOR OPERATED IN PRESSURE-DEMAND OR OTHER POSITIVE PRESSURE MODE.

ANY SELF-CONTAINED BREATHING APPARATUS.

CLOTHING:
PROTECTIVE CLOTHING NOT REQUIRED. AVOID REPEATED OR PROLONGED CONTACT WITH THIS SUBSTANCE.

GLOVES:
PROTECTIVE GLOVES ARE NOT REQUIRED BUT RECOMMENDED.

EYE PROTECTION:
EMPLOYEE MUST WEAR SPLASH-PROOF OR DUST-RESISTANT SAFETY GOGGLES TO PREVENT EYE CONTACT WITH THIS SUBSTANCE.

EMERGENCY EYE WASH: WHERE THERE IS ANY POSSIBILITY THAT AN EMPLOYEE'S EYES MAY BE EXPOSED TO THIS SUBSTANCE, THE EMPLOYER SHOULD PROVIDE AN EYE WASH FOUNTAIN WITHIN THE IMMEDIATE WORK AREA FOR EMERGENCY USE.

AUTHORIZED - FISHER SCIENTIFIC, INC.
CREATION DATE: 06/19/85 REVISION DATE: 09/07/89

-ADDITIONAL INFORMATION-
THIS INFORMATION IS BELIEVED TO BE ACCURATE AND REPRESENTS THE BEST INFORMATION CURRENTLY AVAILABLE TO US. HOWEVER, WE MAKE NO WARRANTY OF MERCHANTABILITY OR ANY OTHER WARRANTY, EXPRESS OR IMPLIED, WITH RESPECT TO THIS INFORMATION, AND WE ASSUME NO LIABILITY RESULTING FROM ITS USE. USERS SHOULD MAKE THEIR OWN INVESTIGATIONS TO DETERMINE THE SUITABILITY OF THE INFORMATION FOR THEIR PARTICULAR PURPOSES.



MATERIAL SAFETY DATA SHEET

MSDS NO.: 285 7013 0000 VER: 05
SAP CODE: 400DS4030A00000010
ISSUE DATE: 04/16/99
SUPERSEDES: 285 7013 0000 VER: 04

Hercules Incorporated
Hercules Plaza
1313 North Market Street
Wilmington, DE 19894-0001
(302) 594-5000 (24 HRS)

Date 6-23-99 ☐ New ☒ Revised
☒ Technical ☒ Maintenance *Trial - #6 Vermillion*
☐ Power Plant ☐ WWTP
☐ Lab ☐ #7 Office
☒ #5/6 Office ☒ #8 Office ☒ Main Gate
☐ Material Prep ☒ Stores ☒ Roll Wrap

HMIS RATINGS
HEALTH: 1
FLAMMABILITY: 0
REACTIVITY: 0

1 PRODUCT IDENTIFICATION

PRODUCT NAME ULTRA-PHASE® CATIONIC DISPERSED SIZE
CHEMICAL DESCRIPTION dispersed rosin size
CAS NUMBER mixture

2 COMPOSITION / INFORMATION ON INGREDIENTS

OSHA Hazardous Ingredient	CASRN	Amount
aluminum sulfate	10043-01-3	1 - 4 %
biocide	proprietary	< 0.1 %

If this product is used in a manner that could generate a mist or aerosol particulates, refer to MSDS Section 8, Recommended Exposure Limits and Personal Protective Equipment.

3 HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

CAUTION!

May cause eye irritation.
May cause skin irritation.
Inhalation of mist or aerosol particulates may cause respiratory tract irritation.
Ingestion may cause gastrointestinal irritation.

POTENTIAL HEALTH EFFECTS

Prolonged or repeated contact may cause skin sensitization in susceptible individuals.

Refer to Section 5 for Hazardous Combustion Products, and Section 10 for Hazardous Decomposition/Hazardous Polymerization Products.

4 FIRST AID MEASURES

SKIN

Wash thoroughly with soap and water. Remove contaminated clothing. Thoroughly wash clothing before reuse. Get medical attention if irritation develops or persists. See Note to Physician.

EYE

Remove contact lenses. Hold eyelids apart. Immediately flush eyes with plenty of low-pressure water for at least 15 minutes. Get medical attention if irritation persists.

INHALATION

Remove to fresh air. Get medical attention if cough or other symptoms develop.

INGESTION

If conscious, drink one to two glasses of water (8-16 oz.). Do not induce vomiting. Get immediate medical attention. Never give anything by mouth to an unconscious person.

NOTES TO PHYSICIAN

This product contains rosin or a rosin derivative. Rosin and some of its derivatives have been reported to cause an allergic skin reaction (sensitization) in susceptible individuals after repeated or prolonged skin contact.

5 FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA

Water spray, dry chemical, foam, carbon dioxide or clean extinguishing agents may be used on fires involving this product.

FIRE FIGHTING PROCEDURES

Wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH approved (or equivalent) and full protective gear when fighting fires involving this product.

CONDITIONS TO AVOID

None known.

HAZARDOUS COMBUSTION PRODUCTS

This material is not expected to support combustion. If heated to decomposition, the following substances may be formed: carbon monoxide, carbon dioxide, aldehydes, carboxylic acids, and smoke.

6 ACCIDENTAL RELEASE MEASURES

For small spills: Add absorbent, sweep up, and dispose appropriately. For large spills, dike to contain and pump into drums for use or disposal. In case of accidental spill or release, refer to Section 8, Personal Protective Equipment and General Hygiene Practices.

7 HANDLING & STORAGE

GENERAL MEASURES

Store in a cool, dry place: approximately 68° F (20° C).

MATERIALS OR CONDITIONS TO AVOID

Avoid storing product near incompatible materials. See MSDS Section 10.
Avoid freezing.

8 EXPOSURE CONTROLS / PERSONAL PROTECTION

WORK PRACTICES & ENGINEERING CONTROLS

Eyewash fountains and safety showers should be easily accessible.
Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits. Discharge from the ventilation system should comply with applicable air pollution control regulations.

GENERAL HYGIENIC PRACTICES

Avoid contact with eyes, skin, and clothing.
Avoid inhalation of mist or aerosol particulates.
Do not swallow.
Avoid contamination of food, beverages, or smoking materials.
Wash thoroughly after handling, and before eating, drinking or smoking.
Remove contaminated clothing promptly and clean thoroughly before reuse.

RECOMMENDED EXPOSURE LIMITS

PARTICULATES (mist or aerosol): If used under conditions that generate particulates (mist or aerosol), the ACGIH TLV-TWA of 3 mg/m³ respirable fraction (10 mg/m³ total) should be observed.

ACGIH 1997 - Time Weighted Average

aluminum sulfate

2 mg/m³ (as Al)

PERSONAL PROTECTIVE EQUIPMENT

Safety glasses

Impervious gloves

Appropriate respiratory protection is required when exposure to airborne contaminants may exceed acceptable limits. Respirators should be selected and used in accordance with OSHA, Subpart I (29 CFR 1910.134) and manufacturers recommendations.

Appropriate protective clothing

PROTECTIVE MEASURES DURING REPAIR AND MAINTENANCE

Completely isolate and thoroughly clean all equipment, piping, or vessels before beginning maintenance or repairs.

9 PHYSICAL & CHEMICAL PROPERTIES

APPEARANCE:	liquid
COLOR:	white
ODOR:	odorless
Boiling Point	212 ° F value is for water
Specific Gravity	similar to water
Vapor Pressure	similar to water
Evaporation Rate	similar to water
Vapor Density	negligible at 68° F
Viscosity	15 - 50 cps at 68° F
Solubility In Water	dispersible
pH Value	2.1 - 3.5
Weight % Solids	35.0 - 40.0

10 STABILITY & REACTIVITY

HAZARDOUS DECOMPOSITION PRODUCTS

In aqueous solutions, biocide may degrade and form methyl isothiocyanate, carbon disulfide, formaldehyde, methylamine and hydrogen sulfide.

HAZARDOUS POLYMERIZATION

Not anticipated under normal or recommended handling and storage conditions.

GENERAL STABILITY CONSIDERATIONS

Stable under recommended handling and storage conditions.

INCOMPATIBLE MATERIALS

Incompatible with: acids, oxidizing agents, alcohols, alkalies and amines.

TOXICOLOGICAL INFORMATION

CARCINOGENICITY INFORMATION

Not listed as a carcinogen by NTP; Not regulated as a carcinogen by OSHA; and Not evaluated by IARC

REPORTED HUMAN EFFECTS

No human toxicity studies have been carried out with this product. May cause skin, eye or respiratory irritation due to pH.

COMPONENT - aluminum sulfate: Ingestion of concentrated solutions produced gingival necrosis and hemorrhagic gastroenteritis, accompanied by incoordination, clonic contractions, and evidence of nephritis.

COMPONENT - Rosin and some rosin derivatives: Reported to cause an allergic skin reaction (sensitization) in susceptible individuals after repeated or prolonged contact.

COMPONENT - biocide: Reported to cause skin sensitization (allergic reaction). Decomposition products cause skin, eye, and respiratory irritation.

REPORTED ANIMAL EFFECTS

No animal toxicity studies have been carried out with this product.

COMPONENT - aluminum sulfate: Acute oral LD50 (rats) for hydrated material: 2812 mg/kg. Acute oral LD50 (mouse) for anhydrous material: 6207 mg/kg. Acute dermal LD50 (rabbit): > 21.4 g/kg, mild skin irritation, and acute eye irritation was moderate. In a 28-day feeding study at 10000 ppm in the diet (hydrated material), rats showed no grossly observable signs of intoxication. At autopsy, a mild incidence of enlarged and/or cystic kidneys were noted at all dietary levels.

12 ECOLOGICAL INFORMATION

ECOTOXICOLOGICAL INFORMATION

No ecological studies have been carried out on this product.

13 DISPOSAL CONSIDERATIONS

WASTE DISPOSAL

Neutralize waste material to adjust pH to levels appropriate for discharge, and flush material with water into an acclimated biological waste treatment system permitted to handle such waste. Landfilling in a permitted solid or hazardous waste facility is a suitable alternative after solidification to remove free liquids. Treatment and disposal should be in accordance with Federal, State and local regulations.

14 TRANSPORT INFORMATION

GENERAL

This product is not subject to DOT, ICAO, IMDG or ADR regulations.

For specific information regarding transportation of this product, please contact the Hercules Transportation Department at (302) 594-7356 or FAX at (302) 594-7304.

15 REGULATORY INFORMATION

CHEMICAL INVENTORIES

U.S. TSCA: Included on TSCA Inventory.

SARA TITLE III - SECTIONS 302/304

This product is not an Extremely Hazardous Substance subject to reporting under 40CFR355.

SARA TITLE III - SECTION 311 AND 312

HC-1: Acute health hazard

HC-2: Chronic health hazard

NPH: Not a physical hazard

SARA TITLE III - SECTION 313

This product does not contain any chemicals subject to reporting under Section 313 of Title III of the Superfund Amendments and Reauthorization Act and 40CFR372.

CERCLA

CERCLA/SARA - Hazardous Substances and their Reportable Quantities

aluminum sulfate

final RQ = 5000 pounds (2270 kg)

RCRA

This product is not a hazardous waste as listed in 40CFR261.33. It does not exhibit any of the hazardous characteristics listed in 40CFR261, Subpart C.

16 OTHER INFORMATION

DISCLAIMER

The information and recommendations contained in this Material Safety Data Sheet have been compiled from sources believed to be reliable and to represent the most reasonable current opinion on the subject when the MSDS was prepared. No warranty, guaranty or representation is made as to the correctness or sufficiency of the information. The user of this product must decide what safety measures are necessary to safely use this product, either alone or in combination with other products, and determine its environmental regulatory compliance obligations under any applicable federal or state laws.

LIST OF ACRONYMS

ACGIH: American Conferences of Governmental Industrial Hygienists

AIHA WEEL: American Industrial Hygienists Association - Workplace Environmental Exposure Level

CASRN: Chemical Abstracts Service Registry Number

CERCLA: Comprehensive Emergency Response, Compensation and Liability Act

HMIS: Hazardous Materials Identification System

IARC: International Agency for Research on Cancer

NTP: National Toxicology Program

OSHA: Occupational Safety and Health Administration

PEL: OSHA Permissible Exposure Limit

RCRA: Resource Conservation and Recovery Act

RQ: Reportable Quantity

SARA: Superfund Amendment Reauthorization Act

STEL: Short-Term Exposure Limit

TLV: Threshold Limit Values (registered trademark of ACGIH)

TPQ: Threshold Planning Quantity

TSCA: Toxic Substance Control Act

TWA: Time Weighted Average

MATERIAL SAFETY DATA SHEET

MSDS NO.: 181 6115 1100 VER: 05
SAP CODE: 400DE4011A00000020
ISSUE DATE: 10/07/1999
SUPERSEDES: 181 6115 1100 VER: 04

Hercules Incorporated
Pulp and Paper Division
Hercules Plaza
1313 North Market Street
Wilmington, DE 19894-0001
(302) 594-5000 (24 HRS)

Date: 11-2-99 () New ☒ Revised
☒ Technical ☒ Maintenance
() Power Plant () WWTP
() Lab ☒ #7 Office
() #5/6 Office () #8 Office ☒ Main Gate
() Material Prep ☒ Stores () Roll Wrap

1 PRODUCT IDENTIFICATION

PRODUCT NAME HERCON® 80 SIZING EMULSION
CHEMICAL DESCRIPTION alkyl ketene dimer emulsion
CAS NUMBER proprietary mixture

2 COMPOSITION / INFORMATION ON INGREDIENTS

This product is not classified as hazardous under OSHA regulations, however, this MSDS contains valuable information important to the safe handling and proper use of the product. This MSDS should be retained and available for employees and other users/handlers of this product.

If this product is used in a manner that could generate a mist or aerosol particulates, refer to MSDS Section 8, Recommended Exposure Limits and Personal Protective Equipment.

HAZARDS IDENTIFICATION**EMERGENCY OVERVIEW****CAUTION!**

May cause skin irritation.
May cause eye irritation.
Inhalation of mist or aerosol particulates may cause respiratory tract irritation.

POTENTIAL HEALTH EFFECTS

Prolonged or repeated contact may cause skin irritation and may cause skin sensitization (allergic reaction) in susceptible individuals.

Refer to Section 5 for Hazardous Combustion Products and Section 10 for Hazardous Decomposition/Hazardous Polymerization Products.

4 FIRST AID MEASURES**SKIN**

Wash thoroughly with soap and water. Remove contaminated clothing. Thoroughly wash clothing before reuse. Get medical attention if irritation develops or persists.

EYE

Remove contact lenses. Hold eyelids apart. Immediately flush eyes with plenty of low-pressure water for at least 15 minutes. Get medical attention if irritation persists.

INHALATION

Remove to fresh air. Get medical attention if nasal, throat or lung irritation develops.

INGESTION

No adverse health effects are expected from accidental ingestion of small amounts of this product. For ingestion of large amounts: If conscious, drink one to two glasses of water (8-16 oz.). Do not induce vomiting. Get immediate medical attention. Never give anything by mouth to an unconscious person.

5 FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA

Water spray, dry chemical, foam, carbon dioxide or clean extinguishing agents may be used on fires involving this product.

FIRE FIGHTING PROCEDURES

Wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH approved (or equivalent) and full protective gear when fighting fires involving this product.

CONDITIONS TO AVOID

None known.

HAZARDOUS COMBUSTION PRODUCTS

This material is not expected to support combustion. If heated to decomposition, the following substances may be formed: carbon monoxide, carbon dioxide, nitrogen oxides, hydrogen chloride, hydrogen cyanide and ammonia.

6 ACCIDENTAL RELEASE MEASURES

For small spills: Flush with excess water to a wastewater treatment system. For large spills: Dike to contain and pump into drums for use or disposal. In case of accidental spill or release, refer to Section 8, Personal Protective Equipment and General Hygiene Practices.

7 HANDLING & STORAGE

GENERAL MEASURES

Store in a cool, dry place: approximately 68° F (20° C).

MATERIALS OR CONDITIONS TO AVOID

Avoid storing product near incompatible materials. See MSDS Section 10.

8 EXPOSURE CONTROLS / PERSONAL PROTECTION

WORK PRACTICES & ENGINEERING CONTROLS

Eyewash fountains and safety showers should be easily accessible.

Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits. Discharge from the ventilation system should comply with applicable air pollution control regulations.

GENERAL HYGIENIC PRACTICES

Avoid contact with eyes, skin, and clothing.

Avoid inhalation of mist or aerosol particulates.

Avoid contamination of food, beverages, or smoking materials.

Wash thoroughly after handling, and before eating, drinking or smoking.

Remove contaminated clothing promptly and clean thoroughly before reuse.

RECOMMENDED EXPOSURE LIMITS

PARTICULATES (mist or aerosol): If used under conditions that generate particulates (mist or aerosol), the ACGIH TLV-TWA of 3 mg/m³ respirable fraction (10 mg/m³ total) should be observed.

PERSONAL PROTECTIVE EQUIPMENT

Safety glasses

Impervious gloves

Appropriate protective clothing

Appropriate respiratory protection is required when exposure to airborne contaminants may exceed acceptable limits. Respirators should be selected and used in accordance with OSHA, Subpart I (29 CFR 1910.134) and manufacturers recommendations.

PROTECTIVE MEASURES DURING REPAIR AND MAINTENANCE

Completely isolate and thoroughly clean all equipment, piping, or vessels before beginning maintenance or repairs.

9 PHYSICAL & CHEMICAL PROPERTIES

PHYSICAL STATE:	liquid
COLOR:	white
ODOR:	mild
Boiling Point	212 F value is for water
Specific Gravity	similar to water
Vapor Pressure	similar to water
Evaporation Rate	similar to water
Vapor Density	lighter than air; value is for water
Viscosity	75 cps at 25 C (typical)
Solubility In Water	miscible with water
pH Value	2.1 - 4
Freezing Point	32 F value is for water
Weight % Solids	14.5 - 15.5

10 STABILITY & REACTIVITY

HAZARDOUS DECOMPOSITION PRODUCTS

In aqueous solutions, biocide degrades and forms methyl isothiocyanate, carbon disulfide, formaldehyde, methylamine and hydrogen sulfide.

HAZARDOUS POLYMERIZATION

Not anticipated under normal or recommended handling and storage conditions.

GENERAL STABILITY CONSIDERATIONS

Stable under recommended handling and storage conditions.

INCOMPATIBLE MATERIALS

Incompatible with: acids , alkalies , oxidizing agents and free-radicals

11 TOXICOLOGICAL INFORMATION

CARCINOGENICITY INFORMATION

Not listed as a carcinogen by NTP. Not regulated as a carcinogen by OSHA. Not evaluated by IARC.

REPORTED HUMAN EFFECTS

No human toxicity studies have been carried out with this product. May cause skin, eye or respiratory irritation due to pH.

COMPONENT - biocide: Reported to cause skin sensitization (allergic reaction). Decomposition products cause skin, eye, and respiratory irritation.

REPORTED ANIMAL EFFECTS

No animal toxicity studies have been carried out with this product.

12 ECOLOGICAL INFORMATION

ECOTOXICOLOGICAL INFORMATION

No ecological studies have been carried out on this product.

13 DISPOSAL CONSIDERATIONS

WASTE DISPOSAL

Neutralize waste material to adjust pH to levels appropriate for discharge, and flush material with water into an acclimated biological waste treatment system permitted to handle such waste. Landfilling in a permitted solid or hazardous waste facility is a suitable alternative after solidification to remove free liquids. Treatment and disposal should be in accordance with Federal, State and local regulations.

14 TRANSPORT INFORMATION

GENERAL

This product is not subject to DOT, ICAO, IMDG or ADR regulations.

For specific information regarding transportation of this product, please contact the Hercules Transportation Department at (302) 594-7356 or FAX at (302) 594-7256.

15 REGULATORY INFORMATION

CHEMICAL INVENTORIES

U.S. TSCA: The components of this product are included on the TSCA Inventory.

SARA TITLE III - SECTIONS 302/304

This product is not an Extremely Hazardous Substance subject to reporting under 40CFR355.

SARA TITLE III - SECTION 311 AND 312

NHH: Not a health hazard

NPH: Not a physical hazard

SARA TITLE III - SECTION 313

This product does not contain any chemicals subject to reporting under Section 313 of Title III of the Superfund Amendments and Reauthorization Act and 40CFR372.

CERCLA

This product does not contain any chemicals subject to reporting as a CERCLA Hazardous Substance under 40CFR302.4.

RCRA

This product is not a hazardous waste as listed in 40CFR261.33. It does not exhibit any of the hazardous characteristics listed in 40CFR261, Subpart C.

16 OTHER INFORMATION

HMIS RATINGS:

Health	1	Slight Hazard
Flammability	0	Minimal Hazard
Reactivity	0	Minimal Hazard

LIST OF ACRONYMS

ACGIH: American Conferences of Governmental Industrial Hygienists
AIHA WEEL: American Industrial Hygienists Association - Workplace Environmental Exposure Level
CASRN: Chemical Abstracts Service Registry Number
CERCLA: Comprehensive Emergency Response, Compensation and Liability Act
HMIS: Hazardous Materials Identification System
IARC: International Agency for Research on Cancer
NTP: National Toxicology Program
OSHA: Occupational Safety and Health Administration
PEL: OSHA Permissible Exposure Limit
RCRA: Resource Conservation and Recovery Act
RQ: Reportable Quantity
SARA: Superfund Amendment Reauthorization Act
STEL: Short-Term Exposure Limit
TLV: Threshold Limit Values (registered trademark of ACGIH)
TPQ: Threshold Planning Quantity
TSCA: Toxic Substance Control Act
TWA: Time Weighted Average

DISCLAIMER

The information and recommendations contained in this Material Safety Data Sheet have been compiled from sources believed to be reliable and to represent the most reasonable current opinion on the subject when the MSDS was prepared. No warranty, guaranty or representation is made as to the correctness or sufficiency of the information. The user of this product must decide what safety measures are necessary to safely use this product, either alone or in combination with other products, and determine its environmental regulatory compliance obligations under any applicable federal or state laws.

MATERIAL SAFETY DATA SHEET

MSDS NO.: 285 7011 0401 VER: 12

SAP CODE: 400DS4030A00000004

ISSUE DATE: 05/24/2000

SUPERSEDES: 285 7011 0401 VER: 11

Hercules Incorporated
Pulp and Paper Division
Hercules Plaza
1313 North Market Street
Wilmington, DE 19894-0001
(302) 594-5000 (24 HRS)

Date 5-30-00 () New (X) Revised
(X) Technical (X) Maintenance
() Power Plant () WWTP
() Lab () #7 Office
(X) #5/6 Office () #8 Office (X) Main Gate
(X) Material Prep () Stores () Roll Wrap

1 PRODUCT IDENTIFICATION

PRODUCT NAME HI-PHASE® 35 CATIONIC DISPERSED SIZE
CHEMICAL DESCRIPTION cationic dispersion of rosin
CAS NUMBER mixture

2 COMPOSITION / INFORMATION ON INGREDIENTS

OSHA Hazardous Ingredient	CASRN	Amount
aluminum sulfate	10043-01-3	< 5 %

3 HAZARDS IDENTIFICATION**EMERGENCY OVERVIEW****CAUTION!**

May cause eye irritation.
May cause skin irritation.
Ingestion may cause gastrointestinal irritation.

POTENTIAL HEALTH EFFECTS

Prolonged or repeated contact may cause skin irritation and may cause skin sensitization (allergic reaction) in susceptible individuals.

Refer to Section 5 for Hazardous Combustion Products, and Section 10 for Hazardous Decomposition/Hazardous Polymerization Products.

4 FIRST AID MEASURES**SKIN**

Wash thoroughly with soap and water. Remove contaminated clothing. Thoroughly wash clothing before reuse. Get medical attention if irritation develops or persists. See Note to Physician.

EYE

Remove contact lenses. Hold eyelids apart. Immediately flush eyes with plenty of low-pressure water for at least 15 minutes. Get medical attention if irritation persists.

INHALATION

Inhalation is not a route of exposure under anticipated conditions of use. Should accidental exposure occur: Remove to fresh air. Get medical attention if nasal, throat or lung irritation develops.

INGESTION

If conscious, drink one to two glasses of water (8-16 oz.). Do not induce vomiting. Get immediate medical attention. Never give anything by mouth to an unconscious person.

NOTES TO PHYSICIAN

This product contains rosin or a rosin derivative. Rosin and some of its derivatives have been reported to cause an allergic skin reaction (sensitization) in susceptible individuals after repeated or prolonged skin contact.

5 FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA

Water spray, dry chemical, foam, carbon dioxide or clean extinguishing agents may be used on fires involving this product.

FIRE FIGHTING PROCEDURES

Wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH approved (or equivalent) and full protective gear when fighting fires involving this product.

CONDITIONS TO AVOID

None known.

HAZARDOUS COMBUSTION PRODUCTS

This material is not expected to support combustion. If heated to decomposition, the following substances may be formed: carbon monoxide, carbon dioxide, aldehydes, carboxylic acids and smoke.

6 ACCIDENTAL RELEASE MEASURES

For small spills: Add absorbent, sweep up, and dispose appropriately. For large spills: Dike to contain and pump into drums for use or disposal. In case of accidental spill or release, refer to Section 8, Personal Protective Equipment and General Hygiene Practices.

7 HANDLING & STORAGE

GENERAL MEASURES

Store between 5-20° C (41-68° F).
Keep container closed when not in use.

MATERIALS OR CONDITIONS TO AVOID

Avoid storing product near incompatible materials. See MSDS Section 10.

8 EXPOSURE CONTROLS / PERSONAL PROTECTION

WORK PRACTICES & ENGINEERING CONTROLS

Eyewash fountains and safety showers should be easily accessible.
Provide adequate ventilation.

GENERAL HYGIENIC PRACTICES

Avoid contact with eyes, skin, and clothing.
Do not swallow.
Avoid contamination of food, beverages, or smoking materials.
Wash thoroughly after handling, and before eating, drinking or smoking.
Remove contaminated clothing promptly and clean thoroughly before reuse.

RECOMMENDED EXPOSURE LIMITS

This product is not considered to present an inhalation health hazard under reasonably anticipated conditions of use.

PERSONAL PROTECTIVE EQUIPMENT

Safety glasses
Impervious gloves
Appropriate protective clothing

PROTECTIVE MEASURES DURING REPAIR AND MAINTENANCE

Completely isolate and thoroughly clean all equipment, piping, or vessels before beginning maintenance or repairs.

9 PHYSICAL & CHEMICAL PROPERTIES

PHYSICAL STATE:	liquid
COLOR:	off-white
ODOR:	tall oil
Boiling Point	212 ° F
Vapor Pressure	similar to water
Evaporation Rate	similar to water
Vapor Density	lighter than air
Solubility In Water	dispersible
pH Value	2.2 - 3.2
Freezing Point	15 ° F
Weight % Solids	35.0

10 STABILITY & REACTIVITY

HAZARDOUS DECOMPOSITION PRODUCTS

In aqueous solutions, biocide may degrade and form methyl isothiocyanate, carbon disulfide, formaldehyde, methylamine and hydrogen sulfide.

HAZARDOUS POLYMERIZATION

Not anticipated under normal or recommended handling and storage conditions.

GENERAL STABILITY CONSIDERATIONS

Stable under recommended handling and storage conditions.

INCOMPATIBLE MATERIALS

Incompatible with: acids , oxidizing agents , alcohols , alkalies and amines

11 TOXICOLOGICAL INFORMATION

CARCINOGENICITY INFORMATION

Not listed as a carcinogen by NTP. Not regulated as a carcinogen by OSHA. Not evaluated by IARC.

REPORTED HUMAN EFFECTS

No human toxicity studies have been carried out with this product. May cause skin, eye or respiratory irritation due to pH.

COMPONENT - Rosin and some rosin derivatives: Reported to cause an allergic skin reaction (sensitization) in susceptible individuals after repeated or prolonged contact.

COMPONENT - aluminum sulfate: Dry powder or concentrated solution may cause inflammation of the skin, eyes or mucous membranes. Ingestion will result in irritation and possible corrosion of the gastrointestinal tract with nausea, vomiting, abdominal pain and diarrhea.

COMPONENT - biocide: Reported to cause skin sensitization (allergic reaction). Decomposition products cause skin, eye, and respiratory irritation.

REPORTED ANIMAL EFFECTS

No animal toxicity studies have been carried out with this product.

COMPONENT - aluminum sulfate: Acute oral LD50 (rats) for hydrated material: 2812 mg/kg. Acute oral LD50 (mouse) for anhydrous material: 6207 mg/kg. Acute dermal LD50 (rabbit): > 21.4 g/kg, mild skin irritation, and acute eye irritation was moderate. In a 28-day feeding study at 10000 ppm in the diet (hydrated material), rats showed no grossly observable signs of intoxication. At autopsy, a mild incidence of enlarged and/or cystic kidneys were noted at all dietary levels.

12 ECOLOGICAL INFORMATION

ECOTOXICOLOGICAL INFORMATION

No ecological studies have been carried out on this product.

COMPONENT - polyamine resin: Acute aquatic 96-hour static LC50 value falls within the highly toxic range of 0.1-1.0 mg/L. Fathead minnow was the tested species. Acute aquatic 48-hour static EC50 value, in the Daphnia, falls within the highly toxic range of 0.1-1.0 mg/L.

13 DISPOSAL CONSIDERATIONS

WASTE DISPOSAL

Neutralize waste material to adjust pH to levels appropriate for discharge, and flush material with water into an acclimated biological waste treatment system permitted to handle such waste. Landfilling in a permitted solid or hazardous waste facility is a suitable alternative after solidification to remove free liquids. Treatment and disposal should be in accordance with Federal, State and local regulations.

14 TRANSPORT INFORMATION

GENERAL

This product is not subject to DOT, ICAO, IMDG or ADR regulations.

For specific information regarding transportation of this product, please contact the Hercules Transportation Department at (302) 594-7356 or FAX at (302) 594-7256.

15 REGULATORY INFORMATION

CHEMICAL INVENTORIES

U.S. TSCA: The components of this product are included on the TSCA Inventory.
Canadian CEPA: Included on DSL Inventory.

SARA TITLE III - SECTIONS 302/304

This product is not an Extremely Hazardous Substance subject to reporting under 40CFR355.

HC-1: Acute health hazard
NPH: Not a physical hazard

This product does not contain any chemicals subject to reporting under Section 313 of Title III of the Superfund Amendments and Reauthorization Act and 40CFR372.

CERCLA/SARA - Hazardous Substances and their Reportable Quantities

final RQ = 5000 pounds (2270 kg)

This product is not a hazardous waste as listed in 40CFR261.33. It does not exhibit any of the hazardous characteristics listed in 40CFR261, Subpart C.

HMIS RATINGS:

Health	1	Slight Hazard
Flammability	0	Minimal Hazard
Reactivity	0	Minimal Hazard

ACGIH: American Conferences of Governmental Industrial Hygienists
 AIHA WEEL: American Industrial Hygienists Association-Workplace Environmental Exposure Level
 ANSI: American National Standards Institute
 CASRN: Chemical Abstracts Service Registry Number
 CEPA: Canadian Environmental Protection Act
 CERCLA: Comprehensive Emergency Response, Compensation and Liability Act
 DSL: Domestic Substances List (Canadian)
 HMIS: Hazardous Materials Identification System
 IARC: International Agency for Research on Cancer
 NDSL: Non-Domestic Substances List (Canadian)
 NTP: National Toxicology Program
 OSHA: Occupational Safety and Health Administration
 PEL: Permissible Exposure Limit (OSHA)
 RCRA: Resource Conservation and Recovery Act
 RQ: Reportable Quantity
 SARA: Superfund Amendment Reauthorization Act
 STEL: Short-Term Exposure Limit
 TLV: Threshold Limit Values (registered trademark of ACGIH)
 TPQ: Threshold Planning Quantity
 TSCA: Toxic Substance Control Act
 TWA: Time Weighted Average

The information and recommendations contained in this Material Safety Data Sheet have been compiled from sources believed to be reliable and to represent the most reasonable current opinion on the subject when the MSDS was prepared. No warranty, guaranty or representation is made as to the correctness or sufficiency of the information. The user of this product must decide what safety measures are necessary to safely use this product, either alone or in combination with other products, and determine its environmental regulatory compliance obligations under any applicable federal or state laws.



MATERIAL SAFETY DATA SHEET

EFFECTIVE DATE 07/12/94



Union Carbide urges each customer or recipient of this MSDS to study it carefully to become aware of and understand the hazards associated with the product. The reader should consider consulting reference works or individuals who are experts in ventilation, toxicology, and fire prevention, as necessary or appropriate to use and understand the data contained in this MSDS.

To promote safe handling, each customer or recipient should: (1) notify its employees, agents, contractors and others whom it knows or believes will use this material or the information in this MSDS and any other information regarding hazards or safety; (2) furnish this same information to each of its customers for the product; and (3) request its customers to notify their employees, customers, and other users of the product of this information.

I. IDENTIFICATION

PRODUCT NAME: CARECOWAX SENTRY POLYETHYLENE GLYCOL 1450 NF, FCC GRADE CR
1450 FLAKE NF, FCC GRADE

CHEMICAL NAME: Polyethylene Glycol

CHEMICAL FAMILY: Oxyalkylene Polymer

FORMULA: $\text{HO}-(\text{CH}_2\text{CH}_2\text{O})_n-\text{H}$

MOLECULAR WEIGHT: 1305-1535

SYNONYMS: Polyoxvethylene 1450

CAS # AND NAME: See Section III, "Ingredients"

Date _____ (☒ New () Revised)

(☒ Technical () Maintenance)
() Power Plant () WWTP
(☒ Lab (☒ #7 Office)
(☒ #5/6 Office () #8 Office (☒ Main Gate)
(☒ Material Prep (☒ Stores () Roll Wrap)

II. PHYSICAL DATA(Determined on Typical Material)

BOILING POINT, 760 mm Hg: >200 C (>392 F)

SPECIFIC GRAVITY(H₂O = 1): =1.102 at 55/20 C

FREEZING POINT: 47 C (117 F)

VAPOR PRESSURE AT 20°C: <0.01 mmHg

Copyright 1994, Union Carbide
CARBOWAX and SENTRY are Trademarks of Union Carbide
EMERGENCY PHONE NUMBERS: 1-800-UCC-HELP (NUMBER AVAILABLE AT ALL TIMES) OR (304) 744-3487

UNION CARBIDE CHEMICALS AND PLASTICS COMPANY INC
Industrial Chemicals Division
39 Old Ridgebury Road, Danbury, CT 06817-0001

EVAPORATION RATE (Butyl Acetate = 1): <0.01

VAPOR DENSITY (AIR = 1): >10

SOLUBILITY IN WATER by wt: 70% at 20 C

APPEARANCE: Transparent colorless
Above freezing point
White
Below freezing point

ODOR: Mild

PHYSICAL STATE: Liquid above freezing point
Solid below freezing point

III. INGREDIENTS

<u>%</u>	<u>MATERIAL</u>	<u>CAS#</u>	<u>EXPOSURE LIMIT</u>
100	Polyethylene Glycol	25322-68-3	None established

IV. FIRE AND EXPLOSION HAZARD DATA

FLASH POINT(test method(s)): 385 F (196 C)
Pensky-Martens Closed Cup ASTM D 93
500 F (260 C)
Cleveland Open Cup ASTM D 92

FLAMMABLE LIMITS IN AIR
% by volume: LOWER: Not Determined
UPPER: Not Determined

SPECIAL FIRE FIGHTING
PROCEDURES: Do not direct a solid stream of water or foam into hot, burning pools; this
may cause frothing and increase fire intensity.
Use self-contained breathing apparatus and protective clothing.

EXTINGUISHING MEDIA: Apply alcohol-type or all-purpose-type foam by manufacturer's recommended
techniques for large fires. Use carbon dioxide or dry chemical media for
small fires.

UNUSUAL FIRE AND
EXPLOSION HAZARDS:

See "Other Precautions" in Section IX.

V. HEALTH HAZARD DATA

EXPOSURE LIMIT(S):

None established by OSHA or ACGIH.

EFFECTS OF SINGLE OVEREXPOSURE:

SWALLOWING:

No evidence of harmful effects from available information.

SKIN ABSORPTION:

No evidence of harmful effects from available information.

INHALATION:

Short-term harmful health effects are not expected from vapor generated at ambient temperature.

SKIN CONTACT:

No evidence of harmful effects from available information.

EYE CONTACT:

No evidence of harmful effects from available information.

EFFECTS OF REPEATED OVEREXPOSURE:

Although this material is not a skin irritant, submersion by workers of unprotected skin in highly concentrated solutions of this material for prolonged periods of time could result in skin dehydration.

MEDICAL CONDITIONS AGGRAVATED BY OVEREXPOSURE:

A knowledge of the available toxicology information and of the physical and chemical properties of the material suggests that overexposure is unlikely to aggravate existing medical conditions.

SIGNIFICANT LABORATORY DATA WITH POSSIBLE RELEVANCE TO HUMAN
HEALTH HAZARD EVALUATION:

None currently known.

OTHER EFFECTS OF OVEREXPOSURE:

Overexposure to vapor generated at high temperatures may result in eye and respiratory tract irritation, dizziness, nausea and the inhalation of harmful amounts of material.

EMERGENCY AND FIRST AID PROCEDURES:

SWALLOWING:

No emergency care anticipated.

SKIN:

Wash skin with soap and water.

INHALATION:

No emergency care anticipated.

EYES:

Flush eyes thoroughly with water for several minutes. Remove contact lenses, if worn.

NOTES TO PHYSICIAN:

Toxicology studies have shown this or similar material to be of very low acute toxicity and nonirritating. There is no specific antidote. Treatment of overexposure should be directed at the control of symptoms and the clinical condition of the patient.

VI. REACTIVITY DATA

STABILITY: Stable

CONDITIONS TO AVOID: None known.

INCOMPATIBILITY (materials to avoid):

Normally unreactive; however, avoid strong bases at high temperatures, strong acids, strong oxidizing agents and materials reactive with hydroxyl compounds.

HAZARDOUS COMBUSTION OR DECOMPOSITION PRODUCTS:

Burning can produce the following products:
Carbon monoxide and/or carbon dioxide.
Carbon monoxide is highly toxic if inhaled; carbon dioxide in sufficient concentrations can act as an asphyxiant.

HAZARDOUS POLYMERIZATION: Will Not Occur

CONDITIONS TO AVOID: None known.

VII. SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED:

Collect for disposal.

WASTE DISPOSAL METHOD:

Incinerate in a furnace where permitted under Federal, State, and local regulations.
See Section IX, "Other Precautions."

VIII. SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION (specify type):

None should normally be necessary. If personnel experience respiratory discomfort or irritation, NIOSH approved half-mask respirator equipped with organic vapor cartridge and dust/mist pre-filter recommended.

VENTILATION:

General (mechanical) room ventilation is expected to be satisfactory.

PROTECTIVE GLOVES:

PVC-coated

EYE PROTECTION: Safety Glasses or Monogoggles

OTHER PROTECTIVE EQUIPMENT:
Eye Bath, Safety Shower

IX. SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE:

ATTENTION!
USE PRODUCT PROMPTLY AFTER OPENING.
AVOID PROLONGED EXPOSURE TO HEAT AND AIR.

FOR INDUSTRY USE ONLY

OTHER PRECAUTIONS:

Biodegradation - This material is resistant to rapid biodegradation. For this reason, incineration is the preferred method of disposal. This product may contain trace amounts of ethylene oxide (CAS No. 75-21-8), a condition which creates the potential for accumulation of ethylene oxide in the head space of shipping and storage containers and in enclosed areas where the product is being handled or used. Ethylene Oxide is considered by OSHA, IARC, and NTP as a potential carcinogen for humans. OSHA considers that, at excess levels, ethylene oxide may present reproductive, mutagenic, genotoxic, neurologic and sensitization hazards in humans. If this product is handled with adequate ventilation, the presence of these trace amounts is not expected to result in any short or long term hazard. This product may not be exempt for OSHA's ethylene oxide standard, 29CFR1910.1047. Users should comply with all applicable provisions. Personnel should be monitored to determine levels of exposure to ethylene oxide. If necessary, protective measures should be taken. The OSHA permissible exposure limit for ethylene oxide is 1 ppm TWA8, the action level is 0.5 ppm TWA8, the ACGIH TLV is 1 ppm TWA8 and OSHA has established an excursion limit of 5 ppm (15 minute average).

PROCESS HAZARD: Sudden release of hot organic chemical vapors or mists from process equipment operating at elevated temperature and pressure, or sudden ingress of air into vacuum equipment, may result in ignitions without the presence of obvious ignition sources. Published "autoignition" or "ignition" temperature values cannot be treated as safe operating temperatures in chemical processes without analysis of the actual process conditions.

Any use of this product in elevated-temperature processes should be thoroughly evaluated to establish and maintain safe operating conditions. Further information is available in a technical bulletin entitled "Ignition Hazards of Organic Chemical Vapors."

X. REGULATORY INFORMATION

STATUS ON SUBSTANCE LISTS:

The concentrations shown are maximum or ceiling levels (weight %) to be used for calculations for regulations. Trade Secrets are indicated by "TS".

FEDERAL EPA

Comprehensive Environmental Response Compensation, and Liability Act of 1980 (CERCLA) requires notification of the National Response Center of release of quantities of Hazardous Substances equal to or greater than the reportable quantities (RQs) in 40 CFR 302.4.

Components present in this product at a level which could require reporting under the statute are:

*** NONE ***

Superfund Amendments and Reauthorization Act of 1986 (SARA) Title III requires emergency planning based on Threshold Planning Quantities (TPQs) and release reporting based on Reportable Quantities (RQs) in 40 CFR 355 (used for SARA 302, 304, 311 and 312).

Components present in this product at a level which could require reporting under the statute are:

*** NONE ***

Superfund Amendments and Reauthorization Act of 1986 (SARA) Title III requires submission of annual reports of release of toxic chemicals that appear in 40 CFR 372 (for SARA 313). This information must be included in all MSDSs that are copied and distributed for this material.

Components present in this product at a level which could require reporting under the statute are:

*** NONE ***

Toxic Substances Control Act (TSCA) STATUS:

The ingredients of this product are on the TSCA inventory.

STATE RIGHT-TO-KNOW

CALIFORNIA Proposition 65

This product contains trace levels of ACETALDEHYDE, DIOXANE AND FORMALDEHYDE which the State of California has found to cause cancer and ETHYLENE OXIDE which the State of California has found to cause cancer, birth defects or other reproductive harm.

MASSACHUSETTS Right-To-Know, Substance List (MSL) Hazardous Substances and Extraordinarily Hazardous Substances on the MSL must be identified when present in products.

Components present in this product at a level which could require reporting under the statute are:

EXTRAORDINARILY HAZARDOUS SUBSTANCES (= > 0.0001%)

UPPER BOUND

CHEMICAL	CAS NUMBER	CONCENTRATION %
Acetaldehyde	75-07-0	.0006
Dioxane	123-91-1	.0005
Ethylene Oxide	75-21-8	.0005
Formaldehyde	50-00-0	.0004

PENNSYLVANIA Right-to-Know, Hazardous Substance List Hazardous Substances and Special Hazardous Substances on the List must be identified when present in products.

Components present in this product at a level which could require reporting under the statute are:

*** NONE ***

CALIFORNIA SCAQMD RULE 443.1 VOC'S:

Vapor Pressure at <0.01 mmHg at 20°C.

VOC 1 g/L

VOC 1 g/L less water and less exempted solvents

OTHER REGULATORY INFORMATION:

EPA Hazard Categories: NONE

NOTE —

The opinions expressed herein are those of qualified experts within Union Carbide. We believe that the information contained herein is current as of the date of this Material Safety Data Sheet. Since the use of this information and the conditions of the use of the product are not under the control of Union Carbide, it is the user's obligation to determine conditions of safe use of the product.

REVISED SECTIONS:

Revisions in this MSDS occurred in the following sections:

SECTION I - IDENTIFICATION

SECTION II - PHYSICAL DATA

SECTION IV - FIRE AND EXPLOSION

SECTION VI - REACTIVITY DATA

SECTION IX - SPECIAL PRECAUTIONS

SECTION X - REGULATORY INFORMATION

PRODUCT: 18289

F NUMBER: N0072D

MSDS's

Hydrochloric Acid

M A T E R I A L S A F E T Y D A T A S H E E T
EM SCIENCE
A DIVISION OF EM INDUSTRIES
111 WOODCREST
HERRY HILL, N.J. 08034-0395

PREPARATION DATE: OCT 27, '87

INFORMATION PHONE NUMBER.:
(609) 354-9200
CHEMTREC EMERGENCY NUMBER:
1-800-424-9300

NFPA HAZARD RATINGS

| HEALTH: 3 FLAMMABILITY: 0
| REACTIVITY : 0 SPECIAL HAZARDS.: N/A

SECTION I - GENERAL INFORMATION

CATALOG NUMBER(S): HX0603 HX0603I HX0603P HX0603Y 314
 315 317 321
CHEMICAL NAME.....: HYDROCHLORIC ACID
TRADE NAME.....: MURIATIC ACID, 23 DEG. BE
C.A.S. NUMBER.....: 7647-01-0
CHEMICAL FAMILY...: INORGANIC ACID
FORMULA.....: HCL (APPROX. 37% IN WATER)
MOLECULAR WEIGHT.: 36.46
DOT SHIPPING NAME: N/A
DOT NUMBER.....: N/A

SECTION II - HAZARDOUS INGREDIENTS

-NONE OTHER THAN SPECIFIED PRODUCT

SECTION III-¹ PHYSICAL DATA

BOILING POINT (C 760 MM HG)!: 110C *
MELTING POINT (C).....: -74C
SPECIFIC GRAVITY(H₂O = 1).....: 1.1885
VAPOR PRESSURE..(MM HG).....: @ 160 20C
PERCENT VOLATILE BY VOL (%)..: 99.9+
VAPOR DENSITY (AIR=1).....: 1.25
EVAPORATION RATE (BUAC=1).....: 2.0
SOLUBILITY IN WATER (%).....: MISCIBLE
APPEARANCE AND ODOR.....: CLEAR, COLORLESS LIQUID
 ACRID ODOR

SECTION IV - FIRE & EXPLOSION HAZARD DATA

FLASH POINT (F).....: NONCOMBUSTIBLE
FLAMMABLE LIMITS LEL %.: N/A
FLAMMABLE LIMITS UEL %.: N/A
EXTINGUISHING MEDIA.....:
 WATER SPRAY

MSDS-HX0603

PAGE # : 01

FIRE FIGHTING PROC.....:

WEAR SELF-CONTAINED BREATHING APPARATUS, PROTECTIVE CLOTHING
FIRE & EXPL. HAZARDS....:

-CONTACT WITH METALS PRODUCES HYDROGEN (SEE SECTION 4)

SECTION V - HEALTH HAZARD DATA (ACUTE AND CHRONIC)

ACGIH TLV/OSHA PEL (TWA).....:

& PEL: 5 PPM (CL)

TOXICITY DATA.....:

-IHL-HMN LDLO: 1300 PPM/30M ORL-RBT LD50: 900 MG/KG

SYMPTOMS OF EXPOSURE

-EYE CONTACT CAUSES SEVERE BURNS AND PERMANENT EYE DAMAGE

SKIN CONTACT CAUSES SEVERE BURNS, POSSIBLE DEEP ULCERATION

INHALATION CAUSES DAMAGE TO NASAL AND RESPIRATORY PASSAGES,

PULMONARY EDEMA

INGESTION CAUSES BURNS OF MOUTH, THROAT AND GASTROINTESTINAL TRACT

MEDICAL COND. AGGRAVATED BY EXP: DATA NOT AVAILABLE.

ROUTES OF ENTRY.....: INHALATION, INGESTION OR SKIN CONTACT.

CARCINOGENICITY.....: SEE COMMENTS, SECTION X; IF NO INFORM-

ATION APPEARS, THE MATERIAL IS NOT LISTED AS A CANCER CAUSING AGENT.

EMERGENCY FIRST AID.....:

SKIN: IMMEDIATELY FLUSH THOROUGHLY WITH LARGE AMOUNTS OF WATER

EYES: IMMEDIATELY FLUSH THOROUGHLY WITH WATER FOR AT LEAST 15 MINUTES

INHALATION: REMOVE TO FRESH AIR; GIVE ARTIFICIAL RESPIRATION IF

BREATHING HAS STOPPED

INGESTION: DO NOT INDUCE VOMITING; GIVE WATER OR MILK IF CONSCIOUS;

GET MEDICAL ATTENTION

GET MEDICAL ASSISTANCE FOR ALL CASES OF OVEREXPOSURE

SECTION VI - REACTIVITY DATA

STABILITY.....: YES

CONDITIONS TO AVOID

-HEAT; CONTACT WITH METALS

MATERIALS TO AVOID.....: () WATER () ACIDS

(X) BASES () CORROSIVES () OXIDIZERS

(X) OTHER (SPECIFY)-ALKALIES AND AMINES; CONTACT WITH METALS PRODUCES

HYDROGEN

HAZARDOUS POLYMERIZATION.: DATA NOT AVAILABLE.

HAZARDOUS DECOMPOSITION.: -TOXIC HYDROGEN CHLORIDE GAS

SECTION VII - ENVIRONMENTAL PROTECTION PROCEDURES

SPILL RESPONSE:

-NEUTRALIZE WITH SODA ASH/SLAKED LIME MIXTURE

TAKE UP AND CONTAINERIZE FOR PROPER DISPOSAL

WASTE DISPOSAL: TO BE PERFORMED IN COMPLIANCE WITH ALL CURRENT LOCAL,

STATE AND FEDERAL REGULATIONS.

SECTION VIII - SPECIAL PROTECTION INFORMATION

VENTILATION, RESPIRATORY PROTECTION, PROTECTIVE CLOTHING, EYE PROTECTION:

MSDS-HX0603 PAGE # : 02

-MATERIAL MUST BE HANDLED OR TRANSFERRED IN AN APPROVED FUME HOOD
OR WITH EQUIVALENT VENTILATION
PROTECTIVE GLOVES (NEOPRENE, NITRILE OR EQUIVALENT) MUST BE
WORN TO PREVENT SKIN CONTACT
SAFETY GLASSES WITH SIDE SHIELDS MUST BE WORN AT ALL TIMES
NIOSH-APPROVED RESPIRATOR SHOULD BE WORN IN THE ABSENCE OF
ADQUATE VENTILATION

SECTION IX - SPECIAL PROTECTION INFORMATION

HANDLING & STORAGE

-KEEP CONTAINER CLOSED TIGHTLY
STORE IN A COOL, WELL-VENTILATED AREA SEPARATED FROM INCOMPATIBLE
MATERIALS
DO NOT BREATHE VAPOR
DO NOT GET IN EYES, ON SKIN OR ON CLOTHING
DO NOT TAKE INTERNALLY
HANDLE EMPTY CONTAINERS WITH CAUTION
ADD ACID CAUTIOUSLY TO WATER WHEN DILUTING - NEVER ADD WATER TO ACID
WORK/HYGIENIC PRACTICES: WASH THOROUGHLY AFTER HANDLING. DO NOT TAKE
INTERNALLY. EYE WASH AND SAFETY EQUIPMENT SHOULD BE READILY AVAILABLE.

SECTION X - OTHER INFORMATION

COMMENTS.....:

-* (20.24% CONSTANT BOILING MIXTURE)
TESTS ON LABORATORY ANIMALS INDICATE MATERIAL MAY PRODUCE
ADVERSE MUTAGENIC AND REPRODUCTIVE EFFECTS

REV. 12/86

REVISION HISTORY.....: 11/01/83, N/A
OCT 27, '87

N/A = NOT AVAILABLE:

MSDS-HX0603

PAGE # : 03

MSDS's

Isobutane

3M General Offices

3M Center
St. Paul, MN 55144-1000
1-800-364-3577 or (651) 737-6501 (24 hours)

01-80
1854

**MATERIAL SAFETY
DATA SHEET**

3M

Date 6-7-00 ☒ New ☐ Revised

☒ Technical ☐ Maintenance *used RW*
☐ Power Plant ☐ WWTP
☐ Lab ☐ #7 Office
☐ #5/6 Office ☐ #8 Office ☒ Main Gate
☐ Material Prep ☒ Stores ☒ Roll Wrap

Copyright, 1998, Minnesota Mining and Manufacturing Company.

All rights reserved. Copying and/or downloading of this information for the purpose of properly utilizing 3M products is allowed provided that:

- 1) the information is copied in full with no changes unless prior agreement is obtained from 3M, and
- 2) neither the copy nor the original is resold or otherwise distributed with the intention of earning a profit thereon.

DIVISION: ADHESIVES DIVISION

TRADE NAME:

3M Super 77 Spray Adhesive

ID NUMBER/U.P.C.:	CS-0406-2131-3	-	-	-	CS-0406-6984-1	-	-	-
	CS-0406-7003-9	-	-	-	62-4437-0921-7	-	-	-
	62-4437-0925-8	00-21200-30091-2			62-4437-0926-6	-	-	-
	62-4437-0927-4	00-21200-25463-5			62-4437-0928-2	00-21200-25463-5		
	62-4437-0929-0	00-21200-25463-5			62-4437-0930-8	-	-	-
	62-4437-0931-6	-	-	-	62-4437-0933-2	00-21200-25463-5		
	62-4437-4030-3	00-21200-76098-3			62-4437-4830-6	00-21200-85853-6		
	62-4437-4925-4	00-21200-21210-9			62-4437-4930-4	00-21200-21210-9		
	62-4437-4931-2	00-21200-39245-0			62-4437-4933-8	00-21200-85846-8		
	62-4437-4935-3	-	-	-	62-4437-4936-1	-	-	-
	62-4437-4938-7	00-21200-39240-5			62-4437-9999-4	-	-	-

ISSUED: APRIL 30, 1998

SUPERSEDES: FEBRUARY 20, 1998

DOCUMENT: 11-4257-9

1. INGREDIENT	C.A.S. NO.	PERCENT
NON-VOLATILE COMPONENTS - N.J.		
TRADE SECRET (T.S.) REGISTRY NO.		
04499600-5776P++	TradeSecret	20.0
CYCLOHEXANE	110-82-7	10.0
2-METHYLPENTANE	107-83-5	5.0
ISOBUTANE	75-28-5	7
PROPANE	74-98-6	7
DIMETHYL ETHER	115-10-6	7
3-METHYLPENTANE	96-14-0	3
2,3-DIMETHYLBUTANE	79-29-8	3
2,2-DIMETHYLBUTANE	75-83-2	1
HEXANE	110-54-3	.1

NOTE: The components of this product are in compliance with the chemical notification requirements of TSCA.

++ rosin, synthetic polymer, resin and antioxidant. Not hazardous according to Canadian WHMIS criteria. Non-WHMIS controlled.

THIS PRODUCT CONTAINS THE FOLLOWING TOXIC CHEMICAL OR CHEMICALS SUBJECT TO THE REPORTING REQUIREMENTS OF SECTION 313 OF TITLE III OF THE EMERGENCY PLANNING AND COMMUNITY RIGHT-TO-KNOW ACT OF 1986 AND 40 CFR PART 372:

CYCLOHEXANE

Abbreviations: N/D - Not Determined N/A - Not Applicable CA - Approximately

3M Center
St. Paul, MN 55144-1000
1-800-364-3577 or (651) 737-6501 (24 hours)

**MATERIAL SAFETY
DATA SHEET**



PAGE: 2 of 6

THIS PRODUCT CONTAINS THE FOLLOWING TOXIC CHEMICAL OR CHEMICALS SUBJECT TO THE REPORTING REQUIREMENTS OF SECTION 319 OF TITLE III OF THE EMERGENCY PLANNING AND COMMUNITY RIGHT-TO-KNOW ACT OF 1986 AND 40 CFR PART 372:
HEXANE

BOILING POINT:.....	Compressed gas
VAPOR PRESSURE:.....	Compressed gas
VAPOR DENSITY:.....	2.97 Air = 1
EVAPORATION RATE:.....	1.90 Ether = 1
SOLUBILITY IN WATER:	n11
SP. GRAVITY:.....	0.697 Water = 1
PERCENT VOLATILE:	75 % by wt
pH:	ca. 6.7
VISCOSITY:.....	N/A
MELTING POINT.....	N/D
APPEARANCE AND ODOR:	liquid in aerosol, light cream colored, sweet/fruity odor.

FLASH POINT:.....	-42.00 F T.C.C.
FLAMMABLE LIMITS - LEL:	N/A
FLAMMABLE LIMITS - UEL:	Flamm. Gas
AUTOIGNITION TEMPERATURE: ...	N/D
EXTINGUISHING MEDIA:	

SPECIAL FIRE FIGHTING PROCEDURES:

Wear full protective clothing, including helmet, self-contained, positive pressure or pressure demand breathing apparatus, bunker coat and pants, bands around arms, waist and legs, face mask, and protective covering for exposed areas of the head.

Closed containers exposed to heat from fire may build pressure and explode. Vapors may travel long distances along the ground or floor to an ignition source and flash back.

NFPA HAZARD CODES: HEALTH: 2 FIRE: 4 REACTIVITY: 0 AEROSOL STORAGE: 3

UNUSUAL REACTION HAZARD: none
OSHA FIRE HAZARD CLASS: Class IA Flammable Liquid

STABILITY: Stable
INCOMPATIBILITY - MATERIALS TO AVOID:
Heat.

HAZARDOUS POLYMERIZATION: Will Not Occur

Carbon Monoxide and Carbon Dioxide, Toxic Vapors, Gases or
Particulates.

১১০০ টি

TATNANAWA : 3-8

ROOO CQR NTO VVJ 07:07 074 000/0090

3M General Offices

3M Center
St. Paul, MN 55144-1000
1-800-364-3577 or (651) 737-6501 (24 hours)

01-80
1856

**MATERIAL SAFETY
DATA SHEET**



**MSDS: 3M Super 77 Spray Adhesive
APRIL 30, 1998**

PAGE: 3 of 6

5. ENVIRONMENTAL INFORMATION

SPILL RESPONSE:

Refer to other sections of this MSDS for information regarding physical and health hazards, respiratory protection, ventilation, and personal protective equipment. Ventilate area. Extinguish all ignition sources. Cover with absorbent material. Collect using non-sparking tools. Place in a U.S. DOT-approved container.

RECOMMENDED DISPOSAL:

Incinerate in a permitted hazardous waste incinerator in the presence of a combustible material. Facility must be capable of handling aerosol cans. Dispose of empty cans in a sanitary landfill. Dispose of waste product in a facility permitted to accept chemical waste.

RECYCLE EMPTY AEROSOL CONTAINERS WHERE AVAILABLE.

ENVIRONMENTAL DATA:

Not determined.

REGULATORY INFORMATION:

Volatile Organic Compounds: 75 % tested per SCAQMD method 305.

Volatile Organic Compounds: ca. 4.4 lb/gal.

VOC Less H₂O & Exempt Solvents: 527 gms/liter tested per SCAQMD method 305.

Hazardous Air Pollutants: < 1 % by wt (0.04 lbs. HAPs/lbs Solids).

Since regulations vary, consult applicable regulations or authorities before disposal. U.S. EPA Hazardous Waste Number = D001 (Ignitable)

OTHER ENVIRONMENTAL INFORMATION:

HALOGEN ANALYSIS: The dry ingredients of 3M Super 77 Spray Adhesive were subjected to combustion in a Parr oxygen bomb. The decomposition products were analyzed by Ion Chromatographic analysis for halogen and sulfur content. Chlorine 0.05%; Fluorine <0.001%, Bromine <0.001%; Sulfur <0.035%.

EPCRA HAZARD CLASS:

FIRE HAZARD: Yes **PRESSURE:** Yes **REACTIVITY:** No **ACUTE:** Yes **CHRONIC:** Yes

6. SUGGESTED FIRST AID

EYE CONTACT:

Immediately flush eyes with large amounts of water. Get immediate medical attention.

SKIN CONTACT:

Flush skin with large amounts of water. If irritation persists, get medical attention.

INHALATION:

Remove person to fresh air. If not breathing, give artificial respiration. If breathing is difficult, get immediate medical

Abbreviations: N/D - Not Determined N/A - Not Applicable CA - Approximately

3M General Offices

3M Center
St. Paul, MN 55144-1000
1-800-364-3577 or (651) 737-6501 (24 hours)

01-80
1857

MATERIAL SAFETY
DATA SHEET

3M

MSDS: 3M Super 77 Spray Adhesive
APRIL 30, 1998

PAGE: 4 of 6

6. SUGGESTED FIRST AID (continued)

attention.

IF SWALLOWED:

Do not induce vomiting. Drink two glasses of water. Call a physician.

7. PRECAUTIONARY INFORMATION

EYE PROTECTION:

Avoid eye contact with vapor, spray, or mist. Wear safety glasses with side shields.

SKIN PROTECTION:

Avoid prolonged or repeated skin contact.

VENTILATION PROTECTION:

Do not use in a confined area or areas with little or no air movement. If exhaust ventilation is not adequate, use appropriate respiratory protection. Provide ventilation adequate to control vapor concentrations below recommended exposure limits and/or control spray or mist.

RESPIRATORY PROTECTION:

Avoid breathing of vapors, mists or spray. Select one of the following NIOSH approved respirators based on airborne concentration of contaminants and in accordance with OSHA regulations: half-mask organic vapor respirator.

PREVENTION OF ACCIDENTAL INGESTION:

Do not ingest.

RECOMMENDED STORAGE:

Store at temperatures below 120 degrees F (49 degrees C). Store out of direct sunlight. Keep out of the reach of children.

FIRE AND EXPLOSION AVOIDANCE:

Aerosol container contains flammable gas under pressure. Keep away from heat, sparks, open flame, and other sources of ignition. Extremely flammable liquid and vapor. Do not pierce or burn container, even after use. No smoking while handling this material. Avoid static discharge.

INGREDIENTS	EXPOSURE LIMITS		TYPE	AUTH	SKIN*
	VALUE	UNIT			
NON-VOLATILE COMPONENTS - N.J. TRADE SECRET (T.S.) REGISTRY NO. 04499600-5776P++	NONE	NONE	NONE	NONE	
CYCLOHEXANE	300	ppm	TWA	ACGIH	
CYCLOHEXANE	300	ppm	TWA	OSHA	

Abbreviations: N/D - Not Determined N/A - Not Applicable CA - Approximately

MATERIAL SAFETY
DATA SHEETMSDS: 3M Super 77 Spray Adhesive
APRIL 30, 1998

PAGE: 5 of 6

7. PRECAUTIONARY INFORMATION (continued)

INGREDIENTS	EXPOSURE LIMITS		UNIT	TYPE	AUTH	SKIN*
	VALUE					
2-METHYLPENTANE	500	ppm	TWA	ACGIH		
2-METHYLPENTANE	1000	ppm	STEL	ACGIH		
ISOBUTANE	NONE	NONE	NONE	NONE		
PROPANE	1000	ppm	TWA	OSHA		
PROPANE	NONE	NONE	NONE	ACGIH		
	Simple asphyxiant					
DIMETHYL ETHER	1000	ppm	TWA	CMRG		
DIMETHYL ETHER	500	ppm	TWA	AIHA		
DIMETHYL ETHER	942	mg/m ³	TWA	AIHA		
3-METHYLPENTANE	500	ppm	TWA	ACGIH		
3-METHYLPENTANE	1000	ppm	STEL	ACGIH		
2,3-DIMETHYLBUTANE	500	ppm	TWA	ACGIH		
2,3-DIMETHYLBUTANE	1000	ppm	STEL	ACGIH		
2,2-DIMETHYLBUTANE	500	ppm	TWA	ACGIH		
2,2-DIMETHYLBUTANE	1000	ppm	STEL	ACGIH		
HEXANE	50	ppm	TWA	ACGIH		
HEXANE	50	ppm	TWA	OSHA		

* SKIN NOTATION: Listed substances indicated with "Y" under SKIN refer to the potential contribution to the overall exposure by the cutaneous route including mucous membrane and eye, either by airborne or, more particularly, by direct contact with the substance. Vehicles can alter skin absorption.

SOURCE OF EXPOSURE LIMIT DATA:

- ACGIH: American Conference of Governmental Industrial Hygienists
- AIHA: American Industrial Hygiene Assoc. Workplace Environmental Exposure Level
- OSHA: Occupational Safety and Health Administration
- CMRG: Chemical Manufacture Recommended Guidelines
- NONE: None Established

8. HEALTH HAZARD DATA

EYE CONTACT:

Moderate Eye Irritation: signs/symptoms can include redness, swelling, pain, tearing, and hazy vision.

SKIN CONTACT:

Mild Skin Irritation (after prolonged or repeated contact): signs/symptoms can include redness, swelling, and itching.

INHALATION:

Intentional concentration and inhalation may be harmful or fatal.

Central Nervous System Depression: signs/symptoms can include headache, dizziness, drowsiness, incoordination, slowed reaction time, slurred speech, giddiness and unconsciousness.

Abbreviations: N/D - Not Determined N/A - Not Applicable CA - Approximately

01-50
1859

PAGE: 6 of 6

CUSTOMER: T0143096 ORDER # : 03302
BATCH #: 982650033 STICKER #: 982650901
ZONE #: RW05

DE NUMBER: 124396360304050671

CT NAME : TEKUSOLV AEROSOL (key reaser)

Certified Laboratories
PH 34317

MATERIAL SAFETY DATA SHEET: TEKUSOLV AEROSOL

PAGE : 1

00000-000000- -5495) DATE OF ISSUE 09/02/98 | SUPERSEDES 08/08/97 |

SECTION I - GENERAL INFORMATION

EMICAL NAME & SYNONYMS N/A TRADE NAME & SYNONYMS TEKUSOLV AEROSOL
EMICAL FAMILY : PETROLEUM/LIMONENE BLEND FORMULA X <-- MIXTURE
NUFACTURE'S NAME: RTIFIED LABS, DIV. OF NCH CORP.
DRESS (NUMBER, STREET, CITY, STATE & ZIP CODE) X 152170 VING, TEXAS 015

Date 9-28-98 () New (X) Revised

(X) Technical (X) Maintenance
() Power Plant (X) WWTP
() Lab (X) #7 Office
(X) #5/6 Office (X) #8 Office (X) Main Gate
(X) Material Prep (X) Stores (X) Roll Wrap

EPARED BY: ASKEW/CHEMIST | PRODUCT CODE NUMBER 5495 | EMERGENCY TELEPHONE NUMBER 972-438-1381

SECTION II - HAZARDOUS INGREDIENTS

E HAZARDS PRESENTED BELOW ARE THOSE OF THE INDIVIDUAL COMPONENTS

EMICAL NAME (INGREDIENTS) : DROTREATED HEAVY NAPHTHA
HAZARD <--> COMB/IRR TLV <--> 300PPM 1 PEL <--> N/E 2.
STEL(TWA)* <--> NOT EST. CAS# <--> 64742-48-9
LIMONENE
HAZARD <--> COMB/IRR TLV <--> N/E 1 PEL <--> N/E 2.
STEL(TWA)* <--> NOT EST. CAS# <--> 5989-27-5
OPANE
HAZARD <--> FLAMMABLE TLV <--> 1000PPM 1 PEL <--> 1000PPM 2.
EL(TWA)* <--> NOT EST. CAS# <--> 74-98-6
OB
HAZARD <--> FLAMMABLE TLV <--> N/E 1 PEL <--> N/E 2.
STEL(TWA)* <--> NOT EST. CAS# <--> 75-28-5

SECTION IIA - NON-HAZARDOUS INGREDIENTS

N-HAZARDOUS INGREDIENT NAMES AND CAS NUMBERS ARE PROTECTED UNDER NJ TRADE
CRET REGISTRY # 409363 -5352

SECTION III - PHYSICAL DATA

ILING PT. (F) 340 | SPEC. GRAVITY (H2O=1) 0.740
POR PR. (MM HG) 2000 | COLOR CLEAR
POR DENSITY >1 | ODOR CITRUS
@ 100% N/E | CLARITY TRANSPARENT
VOLATILE BY VOL 100 | EVAPORATION RATE (BU A/C = 1) <1
O SOLUBILITY INSOLUBLE
SCOSITY NON-VISCOUS

SECTION IV - FIRE AND EXPLOSION HAZARD

ASH POINT: 39 F. | FLAMMABLE LIMITS LEL 0.9 UEL 7.0
M.C.C. | HYDROTREATED NAPHTHA
TINGUISHING MEDIA "ALCOHOL" DRY WATER
<--> FOAM X <--> CO2 X <--> CHEMICAL X <--> SPRAY <--> OTHER
ECIAL FIRE FIGHTING PROCEDURES
REFIGHTERS SHOULD WEAR A SELF-CONTAINED BREATHING APPARATUS AND FULL
OJECTIVE GEAR. SPRAY EXPOSED AEROSOL CONTAINERS WITH WATER TO PREVENT
RSTING.
U RE AND EXPLOSION HAZARDS
O ES, CARBON MONOXIDE, ALDEHYDES AND OTHER DECOMPOSITION PRODUCTS.
ANS MAY EXPLODE WHEN HEATED.

PA HAZARD RATING (0=INSIGNIFICANT;1=SLIGHT;2=MODERATE;3=HIGH;4=EXTREME):
2 <--> HEALTH 4 <--> FLAMMABILITY 0 <--> REACTIVITY <--> SPECIAL

(CONTINUED) - SECTION IV - FIRE AND EXPLOSION HAZARD

SECTION V - HEALTH HAZARD DATA

THRESHOLD LIMIT VALUE:
NOT ESTABLISHED FOR MIXTURE. SEE SECTION II.

EFFECTS OF OVEREXPOSURE :

- ACUTE - (SHORT TERM EXPOSURE)
EYE CONTACT: CAUSES IRRITATION SUCH AS REDNESS AND TEARING.
SKIN CONTACT: MAY CAUSE IRRITATION AND MAY LEAD TO SENSITIZATION IN SOME INDIVIDUALS SENSITIVE TO PRODUCTS CONTAINING ORANGE OIL. FREQUENT OR PROLONGED SKIN CONTACT CAN LEAD TO REDNESS AND DERMATITIS.
INHALATION: MAY BE IRRITATING TO THE RESPIRATORY TRACT. INHALATION OF HIGH CONCENTRATIONS OF VAPOR DUE TO ELEVATED TEMPERATURES CAN CAUSE ANESTHESIA, DROWSINESS, UNCONSCIOUSNESS, CNS EFFECTS AND DEATH.
INGESTION: SMALL AMOUNTS OF THIS PRODUCT ASPIRATED INTO THE RESPIRATORY SYSTEM DURING INGESTION OR VOMITING MAY CAUSE MILD TO SEVERE PULMONARY INJURY, POSSIBLY PROGRESSING TO DEATH.

- CHRONIC - (LONG TERM EXPOSURE)
REPEATED AND PROLONGED SKIN CONTACT MAY BE IRRITATING AND CAUSE SENSITIZATION IN PREVIOUSLY EXPOSED INDIVIDUALS.
MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE ARE PRE-EXISTING RESPIRATORY AND SKIN CONDITIONS SUCH AS ASTHMA, EMPHYSEMA, AND DERMATITIS.
TARGET ORGANS: LIVER, BLOOD-FORMING ORGANS AND KIDNEYS

PRIMARY ROUTE OF ENTRY: X<-- INHALATION <-- INGESTION <-- ABSORPTION

EMERGENCY & FIRST AID PROCEDURES

INHALATION :
REMOVE FROM THE AREA TO FRESH AIR. SEEK MEDICAL ATTENTION IF RESPIRATORY IRRITATION DEVELOPS OR IF BREATHING BECOMES DIFFICULT.

EYE CONTACT:
RINSE THE EYES WITH WATER. REMOVE ANY CONTACT LENSES AND CONTINUE FLUSHING WITH PLENTY OF WATER FOR SEVERAL MINUTES. SEEK MEDICAL ATTENTION IF IRRITATION DEVELOPS.

SKIN CONTACT:
WASH AFFECTED AREAS WITH PLENTY OF SOAP AND WATER FOR SEVERAL MINUTES. SEEK MEDICAL ATTENTION IF IRRITATION DEVELOPS.

INGESTION :
GIVE 3 TO 4 GLASSES OF WATER, BUT DO NOT INDUCE VOMITING. IF VOMITING OCCURS, GIVE FLUIDS AGAIN. SEEK MEDICAL ATTENTION IF DISCOMFORT OCCURS.

NOTES TO PHYSICIAN :
INGESTION AND SUBSEQUENT VOMITING OF THIS PRODUCT CAN LEAD TO ASPIRATION OF THE PRODUCT INTO THE LUNGS WHICH CAN CAUSE DAMAGE AND MAY BE FATAL.

SECTION VI - TOXICITY INFORMATION

PRODUCT CONTAINS CHEMICAL LISTED AS CARCINOGEN OR POTENTIAL CARCINOGEN BY:

IARC	X<--YES	NTP	X<--YES	OSHA	X<--YES	ACGIH	X<--YES	OTHER	X<--YES
	X<--NO	NTP	X<--NO	OSHA	X<--NO	ACGIH	X<--NO	OTHER	X<--NO

HYDROTREATED HEAVY NAPHTHA

ORL-RAT LD50: >5G/KG 4.
SKN-RBT LD50: >3.16G/KG 4.
LABORATORY ANIMAL STUDIES HAVE SHOWN THAT PROLONGED AND REPEATED INHALATION EXPOSURE TO LIGHT HYDROCARBON VAPORS IN THE SAME NAPHTHA BOILING RANGE AS THIS CONSTITUENT CAN PRODUCE ADVERSE KIDNEY EFFECTS IN MALE RATS. THESE EFFECTS WERE NOT OBSERVED IN SIMILAR STUDIES WITH FEMALE RATS AND BOTH SEXES OF MICE AND IN LIMITED STUDIES WITH OTHER ANIMAL SPECIES. IN A NUMBER OF HUMAN STUDIES, THERE WAS NO EVIDENCE OF SUCH EFFECTS AT NORMAL OCCUPATIONAL LEVELS. IT IS THEREFORE HIGHLY UNLIKELY THAT THE EFFECTS IN MALE RATS HAVE SIGNIFICANT IMPLICATIONS FOR HUMANS EXPOSED AT OR BELOW RECOMMENDED VAPOR LIMITS IN THE WORKPLACE.

D-LIMONENE
ORL-RAT LD50: 4400MG/KG 3. INV-MUS LD50: 110MG/KG 3.
ORL-MUS LD50: 5600MG/KG 3. SCU-MUS LD50: 3170MG/KG 3.
TPR-MUS LD50: 600MG/KG 3.
REPRODUCTIVE/TETERAGENIC EFFECTS IN SOME ANIMAL STUDIES 3.

SECTION VII - REACTIVITY DATA

STABILITY | X <--STABLE <--UNSTABLE | CONDITIONS TO AVOID

AVOID HEAT, HOT SURFACES, SPARKS AND OPEN FLAMES.

INCOMPATABILITY (MATERIALS TO AVOID) :
STRONG OXIDIZERS, SUCH AS CHLORINE, IODINE, ECT.

(CONTINUED) - SECTION VII - REACTIVITY DATA

HAZARDOUS DECOMPOSITION PRODUCTS
SMOKE, FUMES, OXIDES OF CARBON, ALDEHYDES.

	WILL NOT OCCUR	MAY OCCUR	CONDITIONS TO AVOID
HAZARDOUS POLYMERIZATION	X		

N/A

SECTION VIII - SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED:
1. TURN OFF AND ELIMINATE ALL IGNITION SOURCES.
2. DUE TO THE NATURE OF THE AEROSOL PACKAGING, A LARGE SPILL IS UNLIKELY. FOR
SMALL SPILLS, ABSORB WITH AN INERT MATERIAL AND TRANSFER ALL MATERIAL
TO A PROPERLY LABELED CONTAINER FOR DISPOSAL. WEAR APPROPRIATE PROTECTIVE
CLOTHING.

WASTE DISPOSAL METHOD(S):
DISPOSE OF ACCORDING TO ALL LOCAL, STATE, AND FEDERAL REGULATIONS.

NEUTRALIZING AGENT :
NONE.

SECTION IX - SPECIAL PROTECTION INFORMATION

REQUIRED VENTILATION :
GENERAL EXHAUST IS USUALLY ADEQUATE. USE LOCAL EXHAUST IF TLV IS EXCEEDED.

PERSONAL PROTECTION :
RESPIRATOR NOT NEEDED AT AMBIENT TEMPERATURES.
A SUPPLIED-AIR DEVICE OR SOLVENT TYPE RESPIRATOR IF HANDLED IN POORLY
VENTILATED AREAS.

SKIN PROTECTION :
NITRILE RUBBER OR NITRILE GLOVES SHOULD BE WORN.

EYE PROTECTION :
SAFETY GLASSES WITH SIDE SHIELDS IF THE METHOD OF
USE PRESENTS THE LIKELIHOOD OF EYE CONTACT.

CLOTHING PROTECTION :
WEAR PROTECTIVE CLOTHING WHEN HANDLING.

SECTION X - STORAGE AND HANDLING INFORMATION

STORAGE TEMPERATURE	INDOOR	HEATED	REFRIGERATED	OUTDOOR
MAX: 120 F. MIN: 0 F.	X			

PRECAUTIONS TO BE TAKEN IN HANDLING & STORING:
HANDLE WITH CAUTION AROUND HEAT, SPARKS, PILOT
LIGHTS, STATIC ELECTRICITY AND OPEN FLAME.

OTHER PRECAUTIONS:
KEEP OUT OF REACH OF CHILDREN. READ THE ENTIRE
LABEL BEFORE USING THE PRODUCT. FOLLOW THE LABEL
DIRECTIONS.

SECTION XI - REGULATORY INFORMATION

CHEMICAL NAME	C.A.S NUMBER	UPPER % LIMIT
A		

SEVERAL INGREDIENTS LISTED ABOVE ARE SUBJECT TO THE REPORTING REQUIREMENTS OF
TITLE III OF THE SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT OF
1980 AND 40 CFR PART 372.

(CONTINUED) - SECTION XI - REGULATORY INFORMATION

IF UE (USE EXEMPTION) APPEARS UNDER UPPER % LIMIT, END USERS ARE EXEMPT FROM NOTIFICATION BECAUSE THE PRODUCT IS USED AND LABELED FOR ROUTINE JANITORIAL WORK, OR THE PRODUCT IS USED AND LABELED FOR FACILITY GROUNDS MAINTENANCE (SUCH AS FERTILIZERS AND HERBICIDES), OR THE PRODUCT IS USED AND LABELED FOR MAINTAINING MOTOR VEHICLES.

CALIFORNIA PROPOSITION 65

WARNING: THIS PRODUCT CONTAINS THE FOLLOWING CHEMICAL(S) KNOWN TO THE STATE OF CALIFORNIA TO CAUSE (1) CANCER OR (2) BIRTH DEFECTS OR OTHER REPRODUCTIVE HARM:

NONE

SECTION XII - TRANSPORTATION * (FOR FUTURE USE)

LABELS	| LIMITED QTY
UNIT CONTAINER	
DOT SPS CONTAINER	| NET EXPLOSIVE WT.
AEROSOL PROPELLANT(S)	

SECTION XIII - REFERENCES

1. THRESHOLD LIMIT VALUES FOR CHEMICAL SUBSTANCES AND PHYSICAL AGENTS AND BIOLOGICAL EXPOSURE INDICES, ACGIH, 1997.
 2. OSHA PEL
 3. SAX'S DANGEROUS PROPERTIES OF INDUSTRIAL MATERIALS, EIGHTH EDITION, RICHARD J. LEWIS, SR.
 4. VENDOR'S MSDS
- ALL OF THE COMPONENTS WITHIN THIS PRODUCT CAN BE FOUND IN THE CURRENT TSCA INVENTORY.

IRR: IRRITANT, FLAM/FLAMM: FLAMMABLE, COMB: COMBUSTIBLE, CORR: CORROSIVE
CARC: CARCINOGENIC, TOX: TOXIC, N/A: NOT APPLICABLE, N/E: NOT ESTABLISHED
COC: CLEVELAND OPEN CUP, PMCC: PENSKY-MARTIN CLOSED CUP, ICC: TAGLIABUE CLOSED CUP, LEL: LOWER EXPLOSION LIMIT, UEL: UPPER EXPLOSION LIMIT, NFPA: NATIONAL FIRE PROTECTION ASSOCIATION, IARC: INTERNATIONAL AGENCY FOR THE RESEARCH ON CANCER, NTP: NATIONAL TOXICOLOGY PROGRAM, OSHA: OCCUPATIONAL SAFETY & HEALTH ADMINISTRATION, ACGIH: AMERICAN CONFERENCE OF GOVERNMENTAL INDUSTRIAL HYGIENISTS, TLV: THRESHOLD LIMIT VALUE, PEL: PERMISSIBLE EXPOSURE LEVEL, STEL: SHORT-TERM EXPOSURE LIMIT, MLD: MILD, MOD: MODERATE, SEV: SEVERE.

* SHORT TERM EXPOSURE LIMIT (TWA) LISTED AS FINAL RULE LIMITS PUBLISHED IN THE FEDERAL REGISTER/VOL. 54 NO. 12, 1-19-89

THE INFORMATION CONTAINED HEREIN IS BASED ON DATA CONSIDERED ACCURATE IN LIGHT OF CURRENT FORMULATION. HOWEVER, NO WARRANTY IS EXPRESSED OR IMPLIED REGARDING THE ACCURACY OF THIS DATA OR THE RESULTS TO BE OBTAINED FROM THE USE THEREOF.

CERTIFIED LABS. DIV. OF NCH CORP. ASSUMES NO RESPONSIBILITY FOR PERSONAL INJURY OR PROPERTY DAMAGE CAUSED BY THE USE, STORAGE OR DISPOSAL OF THE PRODUCT IN A MANNER NOT RECOMMENDED ON THE PRODUCT LABEL. USERS ASSUME ALL RISKS ASSOCIATED WITH SUCH UNRECOMMENDED USE, STORAGE, OR DISPOSAL OF THE PRODUCT.

CRC MATERIAL SAFETY DATA SHEET

SILCO

Industries, Inc. • 885 Louis Drive • Warminster, PA 18974 • (215) 674-4300

FOR 24 HR. EMERGENCY INFORMATION CALL CHEMTREC 1-800-424-9300

PRODUCT NAME CHAIN & WIRE ROPE LUBE AEROSOL #-MSDS03050

PRODUCT- 3050

(Page 1 of 2)

1. INGREDIENTS	CAS #	ACGIH TLV	OSHA PEL	OTHER LIMITS	%
Acrylic copolymer	68171-50-6	NA	NA		4-8
Oils	--	5 mg/m3	5 mg/m3	(mist)	1-4
Organo molybdenum	68958-92-9	NA	NA		1-3
Isohexanes	107-83-5	500 ppm	500 ppm		60-70
n-Hexane	110-54-3	50 ppm	50 ppm		5-10
Propane	74-98-6	NA	1000 ppm		10-20
Isobutane	75-28-5	NA	NA	1000ppm	10-20

2. PHYSICAL DATA : without propellant

Specific Gravity : .683

Vapor Pressure : ND

% Volatile : 90

Boiling Point : 141 F (initial)

Evaporation Rate : NA

Freezing Point : ND

Vapor Density : 4.5 (air=1)

Appearance and Odor:

pH: NA

Light blue liquid. Solvent odor.

Solubility : Not soluble in water.

3. FIRE AND EXPLOSION DATA

Flashpoint : <20 F Method : TCC

Flammable Limits : propellant LEL:1.8 UEL:9.5

Extinguishing Media : Foam, CO2, dry chemical

Unusual Hazards : Aerosol containers may explode when heated above 120F.

4. REACTIVITY AND STABILITY

Stability : Stable

Hazardous decomposition products

: Thermal--carbon dioxide, carbon monoxide

Materials to avoid : Strong oxidizers

5. PROTECTION INFORMATION

Ventilation : Maintain vapor concentration below TLV. Use mechanical means if necessary.

Respiratory : Use self-contained breathing apparatus above the TLV.

Gloves : Solvent resistant

Eye & Face : Safety goggles

Other Protective Equipment: Not normally required with aerosol product usage.

Date 1-2-91
(+) Technical
(+) Power Plant
(+) Lab
(+) #5/6 Office
(+) Material Prep
(+) Stores
(+) Roll Wrap
(+) New
(+) Revised
(+) Maintenance
(+) WWTP
(+) #7 Office
(+) #8 Office

MATERIAL SAFETY DATA SHEET

PRODUCT NAME : CHAIN & WIRE ROPE LUBE AEROSOL #-MSDS03050
PRODUCTS- 3050

MANUFACTURED BY : CRC INDUSTRIES, INC.
885 LOUIS DRIVE, WARMINSTER, PA. 18974

PHONE (215) 674-4300

(Page 2 of 2)

6. HEALTH HAZARD DATA

Primary Routes of Entry : Inhalation, Skin

Signs and Symptoms of Exposure

1. Acute Overexposure:

Eyes- Burning and Irritation. Skin- Mild irritation.
Inhalation- Irritation of respiratory tract, dizziness,
headaches, central nervous system depression.

2. Chronic overexposure: Repeated overexposure may cause harm to the nervous system.

Medical Conditions Generally Aggravated by Exposure
: Pre-existing lung disorders.

Chemical Listed as Carcinogen : No National Toxicology Program
or Potential Carcinogen : No IARC Monographs
: No OSHA

Emergency and First Aid Procedures : (If symptoms persist, call a physician)

1. Inhalation : Remove to fresh air. Apply artificial respiration if necessary.
2. Eyes : Flush with large amounts of water for 15 minutes.
3. Skin : Wash area thoroughly with soap and water.
4. Ingestion : DO NOT induce vomiting. Call a physician.

7. SPILL OR LEAK PROCEDURES

Precautions to be taken : Store in a cool, dry area.
in Handling and Storage

Steps to be taken in case : Usually not a problem with aerosols. Remove
Material is released or sources of ignition, ventilate area, absorb liquid
spilled with inert material and store in closed container

Waste Disposal : All used and unused Product should be disposed of in
conformance with local, state and federal regulations.

8. SPECIAL PRECAUTIONS AND USE DIRECTIONS :

Propane and isobutane are aerosol propellents. Pressure = 55 psig
@ 70 F. Aerosol cans may explode if heated above 120 F.
Vapors are heavier than air and will collect in low areas.

9. NFPA HAZARD RATINGS Health:2 Flammability:4 Reactivity:0

10. SARA Information

This product contains NO chemicals that are subject to
release reporting under section 313 of SARA Title III.

PREPARED BY: Jon Brown

ORIGINAL DATE or DATE OF REVISION: 11/16/92

Marshall E. Campbell Co.
2975 Lapeer Road
Port Huron, MI 48060

CRC MATERIAL SAFETY DATA SHEET

CRC Industries, Inc. • 885 Louis Drive • Warminster, PA 18974 • (215) 674-4300

FOR 24 HR. EMERGENCY INFORMATION CALL CHEMTREC 1-800-424-9300

PRODUCT NAME: CUTTING OIL AEROSOL #MSDS14050
PRODUCT- 14050

(Page 1 of 2)

1. INGREDIENTS	CAS #	ACGIH TLV	OSHA PEL	OTHER LIMITS	%
Lube Oil 500 SUS	64742-52-5	5 mg/m3	5 mg/m3	(mist)	60-70
Organic Lubricant Additives	-	NA	NA		5-10
100 SUS Paraffinic Oil	64742-54-7	5 mg/m3	5 mg/m3	(mist)	4-6
Propane	74-98-6	NA	1000 ppm		5-13
Isobutane	75-28-5	NA	NA	1000ppm	5-13

2. PHYSICAL DATA : without propellant

Specific Gravity : 0.9244 Vapor Pressure : ND
% Volatile : 20
Boiling Point : ND Evaporation Rate : NA
Freezing Point : ND Vapor Density : ND
Appearance and Odor: pH: NA
A brown liquid with a lubricating oil odor.

Solubility : Not soluble in water, but soluble in most organic solvents.

3. FIRE AND EXPLOSION DATA

Flashpoint : <20 F Method : TCC
Flammable Limits : propellant LEL:1.8 UEL:9.5
Extinguishing Media : CO2, dry chemical, foam
Unusual Hazards : Propellant is a flammable gas; however it quickly dissipates after application.

4. REACTIVITY AND STABILITY

Stability : Stable
Hazardous decomposition products
(Thermal)--CO2, carbon monoxide, oxides of sulphur

Materials to avoid : Strong oxidizing agents

5. PROTECTION INFORMATION

Ventilation : Adequate to maintain vapor concentration below TLV

Respiratory : Self-contained breathing apparatus above TLV

Gloves : Oil resistant Eye & Face : Safety goggles
Other Protective Equipment: Not normally required for aerosol product usage.

() Power Plant (X) WWTP
Lab (X) #7 Office
#5/6 Office (X) #8 Office

(X) Material Prep (X) Stores (X) Roll Wrap

SAFETY DATA SHEET

PRODUCT NAME : CUTTING OIL AEROSOL #MSDS14050

PRODUCTS- 14050

MANUFACTURED BY : CRC INDUSTRIES, INC.
885 LOUIS DRIVE, WARMINSTER, PA. 18974

PHONE (215) 674-4300

(Page 2 of 2)

6. HEALTH HAZARD DATA

Primary Routes of Entry : Inhalation, Skin

Signs and Symptoms of Exposure

1. Acute Overexposure:
Eyes: may cause burning and irritation. Skin: excessive contact may cause drying. Inhalation: mist may cause breathing problems. Vapors may cause headaches and nausea.

2. Chronic overexposure: Prolonged exposure to skin may cause dermatitis.

Medical Conditions Generally Aggravated by Exposure : NA

Chemical Listed as Carcinogen : No National Toxicology Program
or Potential Carcinogen : No IARC Monographs
: No OSHA

Emergency and First Aid Procedures (If symptoms persist, call a physician)

1. Inhalation : Remove to fresh air. Apply artificial respiration if necessary.
2. Eyes : Flush with water for 15 minutes.
3. Skin : Remove contaminated clothing. Wash exposed area with soap and water.
4. Ingestion : DO NOT induce vomiting. Call a doctor.

7. SPILL OR LEAK PROCEDURES

Precautions to be taken : Store in a cool, dry area.
in Handling and Storage

Steps to be taken in case : Usually not a problem with aerosols. Ventilate area. Remove sources of ignition. Use absorbent material to pick up waste material.

Waste Disposal : All used and unused Product should be disposed of in conformance with local, state and federal regulations.

8. SPECIAL PRECAUTIONS AND USE DIRECTIONS :

Propane and isobutane serve as aerosol propellents. Pressure=45 psig @ 70 F. Aerosol cans may explode if heated above 120 F.
OSHA short term exposure limit (STEL) for oil is 10 mg/m3.

9. NFPA HAZARD RATINGS Health:2 Flammability:4 Reactivity:0

10. SARA Information

This product contains NO chemicals that are subject to release reporting under section 313 of SARA Title III.

PREPARED BY: Jon Brown

ORIGINAL DATE or DATE OF REVISION: 04/27/93



MATERIAL SAFETY DATA SHEET



CRC Industries, Inc. • 885 Louis Drive • Warminster, PA 18974 • (215) 674-4300

FOR 24 HR. EMERGENCY INFORMATION CALL CHEMTREC 1-800-424-9300

PRODUCT NAME WHITE LITHIUM GREASE AEROSOL # -MSDS03080

PRODUCT-03080

(Page 1 of 2)

1. INGREDIENTS	CAS #	ACGIH TLV	OSHA PEL	OTHER LIMITS	%
Mineral Oil (heavy)	64741-96-4	5 mg/m3	5 mg/m3	(mist)	25-35
Dichloromethane	75-09-2	50 ppm	500 ppm		30-40
Isobutane	75-28-5	NA	NA	1000ppm	10-20
Propane	74-98-6	NA	1000 ppm		10-20
Isohexanes	107-83-5	500 ppm	500 ppm		10-20
n-Hexane	110-54-3	50 ppm	50 ppm		0-10

2. PHYSICAL DATA : (without propellant)

Specific Gravity : 0.959

Vapor Pressure : NA

% Volatile : 77

Boiling Point : 141 F (initial)

Evaporation Rate : NA

Freezing Point : NA

Vapor Density : > air

Appearance and Odor:

pH: NA

Off-white viscous material-solvent odor.

Solubility : Not soluble in water.

Date 4-2-97
(X) Technical (X) Maintenance
(X) Power Plant (X) WWTP
(X) Lab (X) #7 Office
(X) #5/6 Office (X) #8 Office
(X) Material Prep (X) Stores
(X) Roll Wrap
(X) New () Revised

3. FIRE AND EXPLOSION DATA

Flashpoint : <20 F Method : COC

Flammable Limits : ND LEL: UEL:

Extinguishing Media : Foam, Water fog, CO2.

Unusual Hazards : Aerosol containers may explode when heated above 120 F.

4. REACTIVITY AND STABILITY

Stability : Stable

Hazardous decomposition products

: Thermal - carbon dioxide, carbon monoxide

Materials to avoid : Strong oxidizers.

5. PROTECTION INFORMATION

Ventilation : Maintain vapor concentration below the TLV. Use mechanical means if necessary.

Respiratory : Use self contained breathing apparatus above the TLV.

Gloves : Solvent resistant

Eye & Face : Safety goggles

Other Protective Equipment: Not normally required for aerosol product usage.

MATERIAL SAFETY DATA SHEET

PRODUCT NAME : WHITE LITHIUM GREASE AEROSOL #-MSDS03080
PRODUCTS-03080

MANUFACTURED BY : CRC INDUSTRIES, INC. PHONE (215) 674-4300
885 LOUIS DRIVE, WARMINSTER, PA. 18974

(Page 2 of 2)

6. HEALTH HAZARD DATA

Primary Routes of Entry : Inhalation, Skin

Signs and Symptoms of Exposure

1. Acute Overexposure:

Eyes- Burning and Irritation. Skin- Mild irritation.
Inhalation- Irritation of respiratory tract, dizziness,
headaches, central nervous system depression.

2. Chronic overexposure: Repeated overexposure may cause harm to the nervous system.

Medical Conditions Generally Aggravated by Exposure
: Pre-existing lung disorders.

Chemical Listed as Carcinogen : Yes National Toxicology Program
or Potential Carcinogen : Yes IARC Monographs
: Yes OSHA

Emergency and First Aid Procedures : (If symptoms persist, call a physician)

1. Inhalation : Remove to fresh air. Apply artificial respiration if necessary.
2. Eyes : Flush with large amounts of water for 15 minutes.
3. Skin : Wash area thoroughly with soap and water.
4. Ingestion : DO NOT induce vomiting. Call a physician.

7. SPILL OR LEAK PROCEDURES

Precautions to be taken : Store in a cool, dry area.
in Handling and Storage

Steps to be taken in case : Ventilate area. Remove sources of ignition. Absorb
Material is released or liquid with inert material. Caution- Surface may
spilled be slippery.

Waste Disposal : All used and unused Product should be disposed of in
conformance with local, state and federal regulations.

8. SPECIAL PRECAUTIONS AND USE DIRECTIONS :

Propane and isobutane are aerosol propellants. Pressure=45 psig @ 70F.
Aerosol cans may explode when heated above 120 F. Solvent vapors are
heavier than air and will collect in low areas. Be sure to use
adequate ventilation.

9. NFPA HAZARD RATINGS Health:2 Flammability:4 Reactivity:0

10. SARA Information

This product contains the following chemicals that are subject to release
reporting under Section 313 of SARA Title III.

Chemical Name	CAS-#	Percent
Dichloromethane	75-09-2	30-40
n-Hexane	110-54-3	0-10

PREPARED BY: Adam Selisker ORIGINAL DATE or DATE OF REVISION: 04/11/94 Marshall E. Campbell C
2975 Lapeer Road
Port Huron, MI 48060

LOCTITE CORPORATION

Date of Preparation: 4/12

MATERIAL SAFETY DATA SHEET

Page 1 of 5

MATERIAL SAFETY DATA SHEET

SECTION 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME : NICKEL ANTI-SIEZE AEROSOL

IDENTIFICATION NUMBER: 51285

Date 6-8-00 () New (X) Revised

PRODUCT USE/CLASS : Lubricant

MANUFACTURER:

Loctite Corporation
1001 Trout Brook Crossing
Rocky Hill, Connecticut 06067
☒ Technical ☒ Maintenance
☐ Power Plant ☒ WWTP
☐ Lab ☒ #7 Office
☒ #5/6 Office ☒ #8 Office ☒ Main Gate
☒ Material Prep ☒ Stores ☒ Roll Wrap

EMERGENCY TELEPHONE: 860-571-5100 24 hrs.

PREPARER: Safety Health & Regulatory Affairs

PREPARE DATE: 10/15/98

SECTION 2 - COMPOSITION/INFORMATION ON INGREDIENTS

ITEM	CHEMICAL NAME	CAS NUMBER	WT/WT % LESS THAN
01	Graphite	7782-42-5	10.0-30.0
02	Heptane	142-82-5	10.0-30.0
03	n-Hexane	110-54-3	10.0-30.0
04	Isobutane	75-28-5	10.0-30.0
05	Petroleum hydrocarbon	64742-53-5	5.0-10.0
06	Nickel	7440-02-0	10.0-30.0
07	Heavy paraffinic petroleum dist.	64742-65-0	5.0-10.0
08	Propane	74-98-6	10.0-30.0
09	Silicon dioxide (quartz)	14808-60-7	0.1-1.0

EXPOSURE LIMITS

ITEM	TLV-TWA ACGIH	TLV-STEL	PEL-TWA OSHA	PEL-CEILING	COMPANY TLV-TWA	SKIN
01	2.0 mg/m3	N.E.	2.5 mg/m3	N/E	N.E.	NO
02	400 ppm	500 ppm	400 ppm	N/E	500 ppm	NO
03	50 ppm	N.E.	50 ppm	N/E	50 ppm	NO
04	N.E.	N.E.	N.E.	N/E	500 ppm	NO
05	5 mg/m3	N.E.	5 mg/m3	N/E	N.E.	NO
06	.1mg/m3	N.E.	.1mg/m3	N/E	N.E.	NO
07	5mg/m3	N.E.	5mg/m3	N/E	N.E.	NO
08	Asphyxiant	N.E.	1000 ppm	N/E	1000 ppm	NO
09	0.1 mg/m3	N.E.	0.1 mg/m3	N/E	0.1 mg/m3	NO

(See Section 16 for abbreviation legend)

SECTION 3 - HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW: Harmful if inhaled or swallowed. High vapor concentrations may cause drowsiness. Extremely flammable liquid and vapor. Contents under pressure. May cause skin irritation. May cause eye irritation.

ACUTE EFFECTS - EYE CONTACT: Mildly irritating to the eyes. Mechanical irritant. Contact may cause tearing and redness.

ACUTE EFFECTS - SKIN CONTACT: Repeated or prolonged contact may cause sensitization. Mild irritant. Prolonged contact may cause defatting and redness.

ACUTE EFFECTS - INHALATION: Vapors may have a strong offensive odor which

LOCTITE CORPORATION

Date of Preparation: 4/12

MATERIAL SAFETY DATA SHEET

Page 2 of 5

Item No.: 51286

may cause headaches, nausea and vomiting. Prolonged inhalation may be harmful. Causes respiratory tract irritation.

ACUTE EFFECTS - INGESTION: Irritating to mouth, throat and stomach, with nausea.

CHRONIC OVEREXPOSURE EFFECTS: *Preexisting pulmonary and dermatological disorders may be aggravated by exposure to hazardous components. *Studies suggest that solvent chronic overexposure effects are targeted at the liver and central nervous system. Deliberate and repeated inhalation of concentrated solvent vapors may cause permanent neural injury. *This product contains n-hexane, which has been shown to cause peripheral polyneuropathy, a degenerative nervous disorder, in individuals repeatedly exposed to vapors in the 1000 - 1500 ppm range. Repeated or prolonged overexposure may cause central nervous system damage. There is no evidence that exposure to vapor levels at or below the TLV causes nervous system effects. *Repeated and prolonged inhalation of graphite or carbon dusts may cause pulmonary fibrosis, emphysema, and pneumoconiosis. The severity of these effects is greatly influenced by the presence of other harmful mineral dusts, most notably crystalline silica. *This product contains encapsulated silicon dioxide (quartz, silica). No exposure to free respirable silica is anticipated during normal use of this product. It should be noted, however, that free respirable silica may be released by grinding or machining of cured compound and has been listed as a confirmed human carcinogen by NTP and IARC. Inhalation of free respirable silica may cause silicosis or other serious delayed lung injury. Recent studies have also suggested that individuals with silicosis are at increased risk of developing tuberculosis, scleroderma, and/or increased incidence of kidney lesions. *This product contains encapsulated nickel powder. No exposure to free respirable nickel is anticipated during normal use of this product. It should be noted, however, that NTP and IARC have listed nickel as a possible cancer hazard, although IARC could not state with certainty which forms of nickel are human carcinogens. Rodents exposed to high levels of nickel powder via inhalation did not develop increased incidences of malignant tumors.

OTHER INFORMATION: Not Applicable.

PRIMARY ROUTE(S) OF ENTRY: SKIN CONTACT, INHALATION, EYE CONTACT

=====

SECTION 4 - FIRST AID MEASURES

EYE CONTACT: Flush eye with water for 15 minutes. Get medical attention.

SKIN CONTACT: Wash with soap and water. Get medical attention if irritation develops or persists.

INHALATION: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention. If symptoms occur, remove to fresh air. Medical personnel may administer oxygen if breathing is difficult. Seek medical attention if symptoms persist.

INGESTION: If swallowed, DO NOT induce vomiting. Give victim a glass of water or milk. Call a physician or poison control center immediately. Never give anything by mouth to an unconscious person.

NOTES TO PHYSICIAN: Not Applicable.

=====

SECTION 5 - FIRE FIGHTING MEASURES

FLASH POINT: *** F
(SETAFLASH CLOSED CUP)

LOWER EXPLOSIVE LIMIT: 1.0 %
UPPER EXPLOSIVE LIMIT: 9.5 %

AUTOIGNITION TEMPERATURE: No data

EXTINGUISHING MEDIA: ALCOHOL FOAM, CO2, DRY CHEMICAL, FOAM, WATER FOG

LOCTITE CORPORATION

Date of Preparation: 4/12

MATERIAL SAFETY DATA SHEET

Page 3 of 5

Item No.: 51286

UNUSUAL FIRE AND EXPLOSION HAZARDS: Finely divided dust in air may present explosion hazard. Prevent dust buildup. Closed containers may rupture or explode (due to pressure build-up) when exposed to extreme heat. Vapors are heavier than air, and may travel along the ground to be reignited at locations distant from the source; flashback of flame may occur. "Empty" containers may retain dangerous product residues or explosive vapors. DO NOT pressurize, cut, weld, braze, solder, drill or grind on or near empty containers. Store full and empty containers away from heat, sparks, flame, and other sources of ignition. Observe all labeled precautions until containers are cleaned and/or reconditioned. Irritating and/or toxic gases or fumes may be generated by thermal decomposition or combustion.

SPECIAL FIREFIGHTING PROCEDURES: Halogenated extinguishing agents (such as Halon) should not be used. To control the spread of fire, do not use water; ring small fires with dry sand, using non-sparking shovels; avoid creating dust clouds, eliminate drafts, let fire extinguish itself. Use NIOSH-approved self-contained breathing apparatus and full protective clothing. Use water to cool exposed containers. Water stream directed into fire may cause frothing with subsequent spread of flame.

=====

SECTION 6 - ACCIDENTAL RELEASE MEASURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED: Reclaim clean material. Wear appropriate protective equipment during cleanup. Absorb

=====

SECTION 6 - ACCIDENTAL RELEASE MEASURES

with inert material, such as clay. Sweep or shovel into loosely-covered waste container and remove to appropriate waste area. Dispose of in accordance with federal, state, and local regulations. Dispose of damaged aerosol container in accordance with state and local regulations regarding "empty" chemical containers.

=====

SECTION 7 - HANDLING AND STORAGE

HANDLING: Use with adequate ventilation. Follow all MSDS/label precautions even after container is emptied because it may retain product residues. Avoid contact with skin and eyes. FOR INDUSTRIAL USE ONLY.

STORAGE: Keep away from heat, sparks and flame. Do not store in direct sunlight. KEEP OUT OF THE REACH OF CHILDREN.

=====

SECTION 8 - EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS: Local exhaust as needed to control vapor or dust levels to below lowest component TLV.

RESPIRATORY PROTECTION: If TLV/PEL is exceeded, if use is performed in a poorly-ventilated space, or if inhalation effects occur, use NIOSH-approved vapor cartridge respirator in accordance with applicable health and safety regulations and manufacturer's recommendations. Use NIOSH-approved dust/mist respirator when grinding or machining cured compound.

SKIN PROTECTION: Clean clothing to cover skin. Impermeable gloves.

EYE PROTECTION: Safety glasses.

OTHER PROTECTIVE EQUIPMENT: Accessible eye wash and safety shower.

HYGIENIC PRACTICES: Follow good general industrial safety practices during use. Do not smoke or eat during use. Follow all MSDS/label precautions even after container is emptied.

LOCTITE CORPORATION

Date of Preparation: 4/12

MATERIAL SAFETY DATA SHEET

Page 4 of 5

Item No.: 51286

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

BOILING RANGE	: -44 - 4946 F	VAPOR DENSITY	: Is heavier than air
ODOR	: Solvent	ODOR THRESHOLD	: No data
APPEARANCE	: Silver/gray	EVAPORATION RATE	: Is faster than Butyl Acetate
SOLUBILITY IN H2O	: Negligible	SPECIFIC GRAVITY	: 0.8180
FREEZE POINT	: No data	pH @ 0.0 %	: N/A
VAPOR PRESSURE	: 40-50 PSIG	VISCOSITY	: Low
PHYSICAL STATE	: Aerosol		
COEFFICIENT OF WATER/OIL DISTRIBUTION	: N/a		

(See Section 16 for abbreviation legend)

SECTION 10 - STABILITY AND REACTIVITY

CONDITIONS TO AVOID: Prolonged exposure to heat.

INCOMPATIBILITY: Strong bases or oxidants. Reaction with acids can liberate hydrogen gas which can form explosive mixtures with air.

HAZARDOUS DECOMPOSITION PRODUCTS: Oxides of carbon. Under special conditions, nickel can react with carbon monoxide in reducing atmospheres to form nickel carbonyl, an extremely toxic gas.

HAZARDOUS POLYMERIZATION: Will not occur under normal conditions.

STABILITY: This product is stable under normal storage conditions.

SECTION 11 - TOXICOLOGICAL PROPERTIES

COMPONENT TOXICOLOGICAL INFORMATION:

CHEMICAL NAME	LD50	LC50
Graphite		
Heptane		
n-Hexane	Oral rat 28.7 g/kg	Not Applicable
Isobutane		
Petroleum hydrocarbon		
Nickel		
Heavy paraffinic petroleum dist.		
Propane		
Silicon dioxide (quartz)		

SECTION 12 - ECOLOGICAL INFORMATION

ECOLOGICAL TEST DATA: Not Applicable.

SECTION 13 - DISPOSAL CONSIDERATIONS

DISPOSAL METHOD: Review all current federal, state, and local regulations regarding health and disposal for appropriate disposal procedures.

SECTION 14 - TRANSPORTATION INFORMATION

DOT PROPER SHIPPING NAME: Consumer Commodity

DOT TECHNICAL NAME: N/A

DOT HAZARD CLASS: ORM-D

DOT UN/NA NUMBER: NONE

HAZARD SUBCLASS: N/A

PACKING GROUP: N/A

RESP. GUIDE PAGE:

INTERNATIONAL SHIPPING NAME: AIR: Aerosols, Flammable

MARINE: Aerosols

INTERNATIONAL ID NUMBER: UN1950

IMDG CLASS (1st, 2nd): 2

IMDG EMS:

2-15

IMDG PAGE NUMBER: 2102

IATA CLASS (1st, 2nd): 2.1

ADR ITEM NO.:

N/A

ADR TREM CARD:

N/A

LOCTITE CORPORATION

Date of Preparation: 4/12

MATERIAL SAFETY DATA SHEET

Page 5 of 5

Item No.: 51286

=====

SECTION 15 - REGULATORY INFORMATION

=====

OSHA: Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200)

CERCLA - SARA HAZARD CATEGORY:

This product has been reviewed and is considered, under applicable definitions, to meet the following categories:
 FIRE HAZARD IMMEDIATE HEALTH HAZARD CHRONIC HEALTH HAZARD

=====

SARA SECTION 313:

This product contains the following substances subject to the reporting requirements of Section 313 40 CFR Part 372:

CHEMICAL NAME	CAS NUMBER	WT/WT % IS LESS THAN
n-Hexane	110-54-3	10.0-30.0
Nickel	7440-02-0	10.0-30.0

NEW JERSEY RIGHT-TO-KNOW:

The following materials are non-hazardous, but are among the top five components in this product:

CHEMICAL NAME	CAS NUMBER
No non-hazardous materials are among the top five ingredients.	

PENNSYLVANIA RIGHT-TO-KNOW:

The following non-hazardous ingredients are present in the product at greater than 3%:

CHEMICAL NAME	CAS NUMBER
Calcium sulfonate	71486-79-8
Hydrotreated heavy paraffinic dist	64742-54-7
Calcium Stearate	1592-23-0

CALIFORNIA PROPOSITION 65:

WARNING: This product contains a chemical(s) known to the State of California to cause cancer.

CANADIAN WHMIS: This MSDS has been prepared in compliance with Controlled Product Regulations except for use of the 16 headings.

CANADIAN WHMIS CLASS: D2B, A, B1

COMPONENT RCRA CLASSIFICATIONS: Ignitable.

COMPONENT RCRA CODES: D001

CERCLA RQ VALUE (MINIMUM): 100

=====

SECTION 16 - OTHER INFORMATION

=====

HMIS RATINGS - HEALTH: 2 FLAMMABILITY: 4 REACTIVITY: 0

PREVIOUS MSDS REVISION DATE: 11/04/96

REASON FOR REVISION: update ingredients/shipping info

VOLATILE ORGANIC COMPOUNDS (VOCs): 408 grams/ltr

LEGEND: N.A. - Not Applicable, N.E. - Not Established,
 N.D. - Not Determined

ABBREVIATIONS: ACGIH = American Conference of Governmental Industrial Hygienists; OSHA = US Occupational Health and Safety Administration; UK = United Kingdom; TLV-TWA = Threshold Limit Value-Time Weighted Average (8 hrs); STEL = Short-Term Exposure Limit (15 min); C = Ceiling Value; PEL = Permissible Exposure Limit

=====

DATE: 1-15-96 (X) NEW () REVISED

5-94

(X) TECHNICAL () POWER PLANT
 (X) WWTP (X) STORES
 () LAB (X) #5/6 OFFICE
 (X) ROLL WRAP (X) #7 OFFICE
 (X) MAINTENANCE (X) #8 OFFICE
 (X) MATERIAL PREP

12/03

4002

JAN 11 '96 10:33 FR PETRO CANADA S
 01/10/96 WED 16:31 FAX 810 364 4712

Material Safety Data Sheet:

May be used to comply with
 OSHA's Hazard Communication Standard,
 29 CFR 1910.1200. Standard must be
 consulted for specific requirements.

U.S. Department of Labor
 Occupational Safety and Health Administration
 (Non-Mandatory Form)
 Form Approved
 OMB No. 1218-0072



IDENTITY (As Used on Label and List)

PROpane (a liquidified petroleum gas)

Note: Blank spaces are not permitted if any item is not applicable, or no
 information is available, the space must be marked to indicate that

Section I

Manufacturer's Name

St. Clair Underground Storage

Emergency Telephone Number

810-364-8100

Address (Number, Street, City, State, and ZIP Code)

Telephone Number for Information

810-364-8100

Date Prepared

May 18, 1994

Signature of Preparer (optional)

2510 Busha Highway

Marysville, MI 48040

Section II — Hazardous Ingredients/Identity Information

Hazardous Components (Specific Chemical Identity; Common Name(s))	OSHA PEL	ACGIH TLV	Other Limits Recommended	% (optional)
CAS#				
Propane 74986		1000 ppm		95+% (liq vol)
Ethane 74840	none (a simple asphyxiant)			3%
Isobutane 75285	none listed			1%
Propylene 115071		1000 ppm		1%

Composition listed is approximate, but typical.

Ethanethiol (Ethyl Mercaptan) CAS# 75081 is added at concentrations of at least 1.5 lbs per
 10,000 gallons as the use of the propane requires.

Section III — Physical/Chemical Characteristics

Boiling Point	-50°	Specific Gravity (H ₂ O = 1) Compressed to Liquid	0.503
Vapor Pressure (mm Hg.) psig @ 100°F	190-208	Melting Point:	-306°F
Vapor Density (AIR = 1)	1.5	Evaporation Rate A gas at normal temp. and pressure.	

Solubility in Water

6.5 cc per 100 gms water at 64°F

Appearance and Odor Colorless gas; colorless, clear in liquid state; no significant odor unless
 specifically odorized to give typical "gas leak" odor.

Section IV — Fire and Explosion Hazard Data

Flash Point (Method Used)	-156°F	Flammable Limits Vol % in air	LEL 2.1%	UEL 9.5%
---------------------------	--------	----------------------------------	-------------	-------------

Extinguishing Media

Small fires: dry chemical or CO₂. Large fires: water spray fog or foam.

Special Fire Fighting Procedures

Let tank car, tank truck or storage tank burn unless leak can be stopped. With smaller tank
 or cylinders, extinguish/isolate from other flammables. When burning there is a danger of
 violent explosion as liquid in tank nears dryness.

Unusual Fire and Explosion Hazards

Extremely flammable; may be ignited by heat, sparks or flames.
 Vapors may travel to source of ignition and flash back. Container may explode in heat
 of fire. Vapor explosion hazard indoors, outdoors or in sewers.

(Reproduce locally)

OSHA 171-500-1073

Propane

Section V — Reactivity Data

Stability	Unstable		Conditions to Avoid Heat, sparks or flames. Extremely flammable.
	Stable	X	

Incompatibility (Materials to Avoid)

Flame, ClO₂, oxidizing materials

Hazardous Decomposition or Byproducts

N/A

Hazardous Polymerization	May Occur		Conditions to Avoid N/A
	Will Not Occur	X	

Section VI — Health Hazard Data

Route(s) of Entry:	Inhalation?	Skin?	Ingestion?
--------------------	-------------	-------	------------

Primarily inhalation of vapors.

Health Hazards (Acute and Chronic)

Vapors may cause dizziness or suffocation. Contact with evaporating liquid will cause severe frostbite. Fire may produce irritating or poisonous gases.

Carcinogenicity:	NTP?	IARC Monographs?	OSHA Regulated?
------------------	------	------------------	-----------------

None

High concentrations have a central nervous system effect.

Signs and Symptoms of Exposure

Drowsiness, dizziness; an asphyxiant.

Medical Conditions

Generally Aggravated by Exposure

N/A

Emergency and First Aid Procedures Move victim to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call emergency medical care.

Keep victim quiet and maintain normal body temperature.

Section VII — Precautions for Safe Handling and Use

Steps to Be Taken in Case Material Is Released or Spilled

Shut off ignition sources: no flares, smoking or flames in hazard area. Do not touch spilled material. Stop leak if you can do it without risk. Isolate area and deny entry until gas has dispersed; if tank car or truck is involved, isolate 1/2-mile radius.

Waste Disposal Method

For very small amounts: controlled venting in outside air. For large amount: controlled burning in governmental air-pollution-control agency permitted facilities.

Precautions to Be Taken in Handling and Storing

Observe specific handling and safety precautions. Store away from sources of heat, sparks and flame. Store in extremely well-ventilated area or outdoors.

Other Precautions

Ventilate closed area which may contain vapors before entering them. Be aware that vapors may collect in low areas. On occasions odorized propane gas may lose its distinctive odor.

Section VIII — Control Measures

Respiratory Protection (Specify Type)

If exposure is necessary during emergency wear self-contained breathing apparatus.

Ventilation	Local Exhaust	Special
	Explosion-proof fans	N/A
	Mechanical (General)	Other
	N/A	N/A

Protective Gloves	Wear gloves to protect hands from valve leaks which can cause frostbite.	Eye Protection	Safety glasses or goggles.
-------------------	--	----------------	----------------------------

Other Protective Clothing or Equipment

N/A

Work/Hygienic Practices

Avoid routine inhalation exposure.

**SPARTAN CHEMICAL COMPANY, INC.
MATERIAL SAFETY DATA SHEET**

Date: 7-2-76 (X) New () Revised

SECTION I: PRODUCT INFORMATION

PRODUCT NAME OR NUMBER (as it appears on label)

CR-2 CRAWLING INSECT KILLER (AEROSOL)

MANUFACTURER'S NAME

Spartan Chemical Company, Inc.

EMERGENCY TELEPHONE NO.

800/537-8990

ADDRESS (NUMBER, STREET, CITY, STATE AND ZIP CODE)

110 N. Westwood Ave., Toledo, OH 43607

(X) Technical () WWTP
(X) Power Plant () #7 Office
() Lab () #8 Office
() #5/6 Office () Stores
() Material Prep () Roll Wrap
() Maintenance

NFPA RATINGS:	HMIS RATINGS:
HEALTH-1 FIRE-0 REACT-1	HEALTH-1 FIRE-0 REACT-1 PERS. PROT.-B

SECTION II: HAZARDOUS INGREDIENTS

CAS REGISTRY NO.	%W	CHEMICAL NAME(S)	TABLE Z-1-A			CARCINOGEN
			TWA mg/m ³	STEL mg/m ³	CEILING mg/m ³	
8032-32-4	4	Odorless mineral spirits	1350	1800	—	No
*111-76-2	6	Butoxyethanol	120	—	—	No
75-28-5	2	Isobutane	—	—	—	No
74-98-6	3	Propane	1800	—	—	No

*This substance is subject to the reporting requirements of Section 313 of the Emergency Planning and Community Right-to-Know Act of 1986 (SARA) and of 40 CFR 372.

SECTION III: PHYSICAL DATA

BOILING POINT

N/A

SPECIFIC GRAVITY (H₂O = 1)

0.95

PERCENT SOLID BY WEIGHT

3

VAPOR PRESSURE

100mm Hg @ 130°F

VAPOR DENSITY (AIR = 1)

>1

EVAPORATION RATE (but. ace. = 1)

<1

SOLUBILITY IN WATER

Forms an emulsion

pH

7.2-8.0

APPEARANCE AND ODOR

Clear liquid, solvent odor

IS MATERIAL: (LIQUID) SOLID

GAS

PASTE

POWDER

SECTION IV: FIRE & EXPLOSION HAZARD DATA

FLAME EXTENSION - N/A

METHOD USED - ASTM - D3065

FLAMMABLE LIMITS - N/A

EXTINGUISHING MEDIA - Water fog

SPECIAL FIRE FIGHTING PROCEDURES - Keep container cool, use equipment or shielding to protect personnel from bursting, or venting containers.

UNUSUAL FIRE AND EXPLOSION HAZARDS - At elevated temperatures (over 54°C/130°F) containers may vent, rupture or burst.

SECTION V: HEALTH HAZARD DATA

EFFECTS OF OVEREXPOSURE - CONDITIONS TO AVOID

Butoxyethanol is absorbed through the skin which may affect the liver, kidneys, lymph and blood systems. Inhalation may affect central nervous system and cause respiratory irritation.

THRESHOLD LIMIT VALUE - Not established

PRIMARY ROUTES OF ENTRY INHALATION ☒ SKIN CONTACT ☒ OTHER (SPECIFY) _____

CONDITIONS AGGRAVATED BY USE - Unknown

EMERGENCY AND FIRST AID PROCEDURES - EYES: In case of contact, immediately flush eyes with water for at least 15 minutes. Remove contact lenses. SKIN: In case of skin contact, remove contaminated clothing and immediately wash skin with plenty of water. INGESTION: If swallowed, call a physician or Poison Control Center. Drink 1 or 2 glasses of water and induce vomiting by touching back of throat with finger. Do not induce vomiting or give anything by mouth to an unconscious person. INHALATION: If inhaled, remove person to fresh air and call a physician. NOTE TO PHYSICIAN: Chlorpyrifos is a cholinesterase inhibitor. Treat symptomatically. Atropine only by injection is an antidote.

SECTION VI: REACTIVITY DATA

STABILITY: STABLE ☒

INCOMPATIBILITY (MATERIALS TO AVOID) - None

HAZARDOUS DECOMPOSITION PRODUCTS - None known

HAZARDOUS POLYMERIZATION: WILL NOT OCCUR ☒

SECTION VII: SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED - Avoid breathing vapors, remove ignition sources, pick up with scoop or absorbent material.

WASTE DISPOSAL METHOD - Do not incinerate or puncture aerosol container. Dispose of in accordance with state, local or Federal regulations.

SECTION VIII: SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION (SPECIFY TYPE) - None required

VENTILATION - Good general ventilation should be sufficient for most conditions. Local exhaust ventilation may be necessary for some operations.

PROTECTIVE GLOVES (SPECIFY TYPE)

Rubber gloves

EYE PROTECTION (SPECIFY TYPE)

Goggles

OTHER PROTECTIVE EQUIPMENT - Not necessary

SECTION IX: SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING - Contents under pressure. Do not use near fire, sparks or flame. Do not store where temperatures could exceed 130°F.

OTHER PRECAUTIONS - None

Spartan Chemical Company, Inc.
CR-2 CRAWLING INSECT KILLER (AEROSOL)
Ref: 29 CFR 1910:1200 (OSHA)

NAME	Thomas J. Mitchell
TITLE	Director of Research
DATE	July 18, 1996
SUPERCEDES	September 20, 1994

SPARTAN CHEMICAL CO., INC.
MATERIAL SAFETY DATA SHEET

SECTION I: PRODUCT INFORMATION

PRODUCT NAME OR NUMBER (as it appears on label)

STERIPHENE II BRAND DISINFECTANT DEODERANT

(Clean Fresh and Spring Breeze Fragrance)

MANUFACTURER'S NAME

Spartan Chemical Co., Inc.

EMERGENCY TELEPHONE NO.

419/531-5551

ADDRESS (NUMBER, STREET, CITY, STATE AND ZIP CODE)

110 N. Westwood Ave., Toledo, OH 43607

MANUFACTURER'S D-U-N-S NO.

00-503-6728

NFPA RATINGS:	HMIS RATINGS:
HEALTH-0 FIRE-2 REACT-0	HEALTH-1 FIRE-4 REACT-0 PERS. PROT.-A

SECTION II: HAZARDOUS INGREDIENTS

CAS REGISTRY NO.	%W	CHEMICAL NAME(S)	TABLE Z-1-A			CARCINOGEN
			TWA mg/M ³	STEL mg/M ³	CEILING mg/M ³	
64-17-5	64.00	Ethyl alcohol	1900	1900	n/a	No
74-98-6	8-12	Propane	1800	1800	n/a	No
75-28-5	8-12	Isobutane	-- not established --			No

SECTION III: PHYSICAL DATA

BOILING POINT

165-175°F

VAPOR PRESSURE

35 mm Hg @ 20°C

VAPOR DENSITY (AIR = 1)

Unknown

SOLUBILITY IN WATER

Complete

pH

8.0-9.0

SPECIFIC GRAVITY (H₂O = 1)

0.84 (concentrate)

EVAPORATION RATE (but. ace. = 1)

1.5 (concentrate)

APPEARANCE AND ODOR

Light yellow liquid,
citrus, floral fragrance

PERCENT SOLID BY WEIGHT

trace

IS MATERIAL: (LIQUID) SOLID

GAS PASTE POWDER

SECTION IV: FIRE & EXPLOSION HAZARD DATA

FLAME EXTENSION - 20" METHOD USED - ASTM - D92

FLAMMABLE LIMITS - n/a

EXTINGUISHING MEDIA

Foam or CO₂

SPECIAL FIRE FIGHTING PROCEDURES - Use equipment or shielding required to protect personnel against bursting, rring or venting containers.

UNUSUAL FIRE AND EXPLOSION HAZARDS - At elevated temperatures (54°C/130°F) containers may vent, rupture or burst.

SECTION V: HEALTH HAZARD DATA

EFFECTS OF OVEREXPOSURE – CONDITIONS TO AVOID **THRESHOLD LIMIT VALUE** – Not established
Causes eye and skin irritation. Do not spray in eyes or on skin. Do not spray on food or food utensils.
Avoid inhalation.

CONDITIONS AGGRAVATED BY USE – Unknown

PRIMARY ROUTES OF ENTRY INHALATION X SKIN CONTACT X OTHER (SPECIFY)

EMERGENCY AND FIRST AID PROCEDURES

In case of contact, immediately flush eyes or skin with plenty of water for at least 15 minutes.
If irritated, call a physician. In case of prolonged skin contact, wash with soap and water.

SECTION VI: REACTIVITY DATA

STABILITY: UNSTABLE
 STABLE X

INCOMPATIBILITY (MATERIALS TO AVOID) – None known

HAZARDOUS DECOMPOSITION PRODUCTS – CO₂, CO

HAZARDOUS MAY OCCUR
POLYMERIZATION: WILL NOT OCCUR X

SECTION VII: SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED

Flush with water through sanitary sewer system.

WASTE DISPOSAL METHOD

Do not incinerate or puncture aerosol container. Dispose of in accordance with state or local regulations.

SECTION VIII: SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION (SPECIFY TYPE)

None required

VENTILATION – Good general ventilation should be sufficient for most conditions. Local exhaust ventilation may be necessary for some operations.

PROTECTIVE GLOVES (SPECIFY TYPE)

None required

EYE PROTECTION (SPECIFY TYPE)

None required

OTHER PROTECTIVE EQUIPMENT

None

SECTION IX: SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING – Flammable! Contents under pressure. Do not use near fires, sparks or flame. Do not store where temperatures could exceed 120°F.

OTHER PRECAUTIONS – None

Spartan Chemical Co., Inc.
STERIPHENE II BRAND DISINFECTANT DEODERANT
Ref: 29 CFR 1910:1200 (OSHA)

NAME	Thomas J. Mitchell
TITLE	Director of Research
DATE	December 10, 1992
SUPERCEDES	June 1, 1990

SPARTAN CHEMICAL CO., INC.
MATERIAL SAFETY DATA SHEET

SECTION I: PRODUCT INFORMATION

PRODUCT NAME OR NUMBER (as it appears on label)

PREMIUM WOOD POLISH (AEROSOL)

MANUFACTURER'S NAME

Spartan Chemical Co., Inc.

EMERGENCY TELEPHONE NO.

419/531-5551

ADDRESS (NUMBER, STREET, CITY, STATE AND ZIP CODE)

110 N. Westwood Ave., Toledo, OH 43607

MANUFACTURER'S D-U-N-S NO.

00-503-6728

NFPA RATINGS:	HMIS RATINGS:
HEALTH-1 FIRE-0 REACT-1	HEALTH-2 FIRE-2 REACT-1 PERS. PROT.-A

SECTION II: HAZARDOUS INGREDIENTS

CAS REGISTRY NO.	%W	CHEMICAL NAME(S)	TABLE Z-1-A			CARCINOGEN
			TWA mg/M ³	STEL mg/M ³	CEILING mg/M ³	
8032-32-4	5-10	Odorless mineral spirits	1350	1800	---	No
75-28-5	5-10	Isobutane	---	not established	---	No
74-98-6	5-10	Propane	---	1800	---	No

SECTION III: PHYSICAL DATA

BOILING POINT

n/a

SPECIFIC GRAVITY (H₂O = 1)

0.93

PERCENT SOLID BY WEIGHT

23-26

VAPOR PRESSURE

n/a

EVAPORATION RATE (but. ace. = 1)

<1

VAPOR DENSITY (AIR = 1)

Unknown

SOLUBILITY IN WATER

Forms an emulsion

APPEARANCE AND ODOR

Off-white, opaque emulsion,
lemon fragrance

IS MATERIAL: (LIQUID) SOLID
GAS PASTE POWDER

pH

7.4

SECTION IV: FIRE & EXPLOSION HAZARD DATA

FLASH POINT - None

METHOD USED - ASTM - D92

FLAMMABLE LIMITS - n/a

EXTINGUISHING MEDIA

Water, carbon dioxide, chemical or dry foam

ECIAL FIRE FIGHTING PROCEDURES

Use equipment or shielding required to protect personnel against bursting, rupturing or venting containers.

UNUSUAL FIRE AND EXPLOSION HAZARDS

At elevated temperatures (54°C/130°F) containers may vent, rupture or burst.

SECTION V: HEALTH HAZARD DATA

EFFECTS OF OVEREXPOSURE – CONDITIONS TO AVOID **THRESHOLD LIMIT VALUE** – Not established
May cause eye irritation.

PRIMARY ROUTES OF ENTRY INHALATION ☐ SKIN CONTACT ☒ OTHER (SPECIFY) ☐

CONDITIONS AGGRAVATED BY USE – Unknown

EMERGENCY AND FIRST AID PROCEDURES – EYES: In case of contact, immediately flush eyes with water for at least 15 minutes. If irritation persists, call a physician.

SECTION VI: REACTIVITY DATA

STABILITY: STABLE ☒

INCOMPATIBILITY (MATERIALS TO AVOID)

None known

HAZARDOUS DECOMPOSITION PRODUCTS

None known

HAZARDOUS POLYMERIZATION: WILL NOT OCCUR ☒

SECTION VII: SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED

Pick up excess with absorbent material and discard properly. Flush surface with water.

WASTE DISPOSAL METHOD

Do not incinerate or puncture aerosol container. Dispose of in accordance with state, local or Federal regulations.

SECTION VIII: SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION (SPECIFY TYPE) – None required

VENTILATION – Good general ventilation should be sufficient for most conditions. Local exhaust ventilation may be necessary for some operations.

PROTECTIVE GLOVES (SPECIFY TYPE)

Not required

EYE PROTECTION (SPECIFY TYPE)

Not required

OTHER PROTECTIVE EQUIPMENT

None required

SECTION IX: SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING

Contents under pressure. Do not use near fire, sparks or flame. Do not store where temperatures could exceed 120°F.

OTHER PRECAUTIONS

None

Spartan Chemical Co., Inc.
PREMIUM WOOD POLISH (AEROSOL)
Ref: 29 CFR 1910:1200 (OSHA)

NAME	Thomas J. Mitchell
TITLE	Director of Research
DATE	December 21, 1992
SUPERCEDES	June 1, 1990

Storeroom Inventory

STOREROOM PART MASTER INQUIRY

PART NO	89116		
DESCRIPTION	ADHESIVE, SUPER #77 3M SPRAY GLUE		/ ROLL WRAP
QU ON HAND	48		
QU @ NO COST			
QU ON ORDER			RECEIVED
MAX QU	48	MTD QU	0
MIN QU	24	MTD \$	.00
UNITS	EACH	YTD QU	132
LOCATION	32.4.7	YTD \$	926.88
AVG COST/UNIT	7.27		
DELIVERY DATE			USED
LEAD TIME	ENTRY 1070	MTD QU	0
LAST ORDER		MTD \$	.00
DATE	5/10/00	YTD QU	119
ORDER NO	D5154	YTD \$	818.72
VENDOR	MARSHALL E. CAMPBELL		
LAST RECEIVED	5/11/00	PREV. YEAR USAGE	220
MENTS			
COMMENTS	REPLACES TAG 89132		

CMD 2 TO RETURN, CMD 3 FOR NEXT PAGE

STOREROOM PART MASTER INQUIRY

PART NO	88413		
DESCRIPTION	TEKUSOLVE, SPRAY DEGREASER #5495		
QU ON HAND	43		
QU @ NO COST			RECEIVED
QU ON ORDER		MTD QU	60
MAX QU	60	MTD \$	652.50
MIN QU	36	YTD QU	420
UNITS	EACH	YTD \$	4,417.50
LOCATION	31.1.2		
AVG COST/UNIT	10.88		USED
DELIVERY DATE		MTD QU	30
LEAD TIME		MTD \$	313.80
LAST ORDER		YTD QU	389
DATE	5/23/00	YTD \$	4,068.94
ORDER NO	041157		
VENDOR	CERTIFIED LABORATORI	PREV. YEAR USAGE	486
LAST RECEIVED	6/01/00		
MENTS			
COMMENTS	48 IS PRICE BREAK		

CMD 2 TO RETURN, CMD 3 FOR NEXT PAGE

STOREROOM PART MASTER INQUIRY

Chain & Wire Rope Lube

PART NO	88401		
DESCRIPTION	LUBRICANT, OSBORN OPEN GEAR #76200/MOBILTAC-E (#03050 CRC)		
QU ON HAND	4		
QU @ NO COST		RECEIVED	
QU ON ORDER		MTD QU	0
MAX QU	12	MTD \$	.00
MIN QU	4	YTD QU	0
UNITS		YTD \$	.00
LOCATION	32.1.2		
AVG COST/UNIT	5.28	USED	
DELIVERY DATE		MTD QU	0
LEAD TIME		MTD \$	.00
LAST ORDER		YTD QU	4
DATE	10/29/98	YTD \$	21.12
ORDER NO	C08312		
VENDOR	MARSHALL E. CAMPBELL	PREV. YEAR USAGE	1-
LAST RECEIVED	10/30/98		
COMMENTS			
OMMENTS			

CMD 2 TO RETURN, CMD 3 FOR NEXT PAGE

STOREROOM PART MASTER INQUIRY

PART NO	88406		
DESCRIPTION	CUTTING OIL, OSBORN #76203 (#14050 CRC)		
QU ON HAND	8		
QU @ NO COST		RECEIVED	
QU ON ORDER		MTD QU	0
MAX QU	12	MTD \$	.00
MIN QU	6	YTD QU	0
UNITS		YTD \$	.00
LOCATION	32.1.1		
AVG COST/UNIT	4.71	USED	
DELIVERY DATE		MTD QU	0
LEAD TIME		MTD \$	.00
LAST ORDER		YTD QU	8
DATE	4/02/98	YTD \$	37.68
ORDER NO	C05954		
VENDOR	MARSHALL E. CAMPBELL	PREV. YEAR USAGE	12
LAST RECEIVED	4/03/98		
OMMENTS			
MMMENTS			

CMD 2 TO RETURN, CMD 3 FOR NEXT PAGE

STOREROOM PART MASTER INQUIRY

PART NO	88402		
DESCRIPTION	SPRAY GREASE, WHITE LITHIUM (#03080 CRC)		
QU ON HAND	15		
QU @ NO COST			RECEIVED
ON ORDER		MTD QU	0
QU	12	MTD \$	.00
MIN QU	4	YTD QU	24
UNITS		YTD \$	115.08
LOCATION	32.1.1		
AVG COST/UNIT	4.90		USED
DELIVERY DATE		MTD QU	0
LEAD TIME		MTD \$	.00
LAST ORDER		YTD QU	19
DATE	5/18/00	YTD \$	87.55
ORDER NO	D5241		
VENDOR	MARSHALL E. CAMPBELL	PREV. YEAR USAGE	35
LAST RECEIVED	5/19/00		
COMMENTS			
COMMENTS			

CMD 2 TO RETURN, CMD 3 FOR NEXT PAGE

STOREROOM PART MASTER INQUIRY

PART NO	88394		
DESCRIPTION	NEVER-SEEZ, ANTI SIEZE SPRAY NICKLE #NSN-16A		
QU ON HAND	4		
QU @ NO COST			RECEIVED
QU ON ORDER	3	MTD QU	0
MAX QU	8	MTD \$	.00
MIN QU	4	YTD QU	8
UNITS		YTD \$	135.84
LOCATION	32.2.3		
AVG COST/UNIT	16.98		USED
DELIVERY DATE	6-13-00	MTD QU	3
LEAD TIME		MTD \$	50.94
LAST ORDER		YTD QU	10
DATE	6/06/00	YTD \$	169.80
ORDER NO	D5506		
VENDOR	MARSHALL E. CAMPBELL	PREV. YEAR USAGE	12
LAST RECEIVED	6/07/00		
COMMENTS			
COMMENTS			

D 2 TO RETURN CMD 3 FOR NEXT PAGE CMD 7 NEXT PART CMD 8 PRIOR PART

MSDS's

Propane

3M General Offices

3M Center
St. Paul, MN 55144-1000
1-800-364-3577 or (651) 737-6501 (24 hours)

01-80
1854

MATERIAL SAFETY DATA SHEET

Date 6-7-00 ☒ New ☐ Revised
☒ Technical ☐ Maintenance *See RW*
☐ Power Plant ☐ WWTP
☐ Lab ☐ #7 Office
☐ #5/6 Office ☐ #8 Office ☒ Main Gate
☐ Material Prep ☒ Stores ☒ Roll Wrap

3M

Copyright, 1998, Minnesota Mining and Manufacturing Company.
 All rights reserved. Copying and/or downloading of this information for
 the purpose of properly utilizing 3M products is allowed provided that:
 1) the information is copied in full with no changes unless prior agreement
 is obtained from 3M, and
 2) neither the copy nor the original is resold or otherwise distributed with
 the intention of earning a profit thereon.

DIVISION: ADHESIVES DIVISION

TRADE NAME:

3M Super 77 Spray Adhesive

ID NUMBER/U.P.C.:	CS-0406-2131-3	-	-	-	CS-0406-6984-1	-	-	-
	CS-0406-7003-9	-	-	-	62-4437-0921-7	-	-	-
	62-4437-0925-8	00-21200-30091-2	-	-	62-4437-0926-6	-	-	-
	62-4437-0927-4	00-21200-25463-5	-	-	62-4437-0928-2	00-21200-25463-5	-	-
	62-4437-0929-0	00-21200-25463-5	-	-	62-4437-0930-8	-	-	-
	62-4437-0931-6	-	-	-	62-4437-0933-2	00-21200-25463-5	-	-
	62-4437-4030-3	00-21200-76098-3	-	-	62-4437-4830-6	00-21200-85853-6	-	-
	62-4437-4925-4	00-21200-21210-9	-	-	62-4437-4930-4	00-21200-21210-9	-	-
	62-4437-4931-2	00-21200-39245-0	-	-	62-4437-4933-8	00-21200-85846-8	-	-
	62-4437-4935-3	-	-	-	62-4437-4936-1	-	-	-
	62-4437-4938-7	00-21200-39240-5	-	-	62-4437-9999-4	-	-	-

ISSUED: APRIL 30, 1998

SUPERSEDES: FEBRUARY 20, 1998

DOCUMENT: 11-4257-9

1. INGREDIENT	C.A.S. NO.	PERCENT
NON-VOLATILE COMPONENTS - N.J.		
TRADE SECRET (T.S.) REGISTRY NO.		
04499600-5776P++	TradeSecret	20.0
CYCLOHEXANE	110-82-7	10.0
2-METHYLPENTANE	107-83-5	5.0
ISOBUTANE	75-28-5	7
PROPANE	74-98-6	7
DIMETHYL ETHER	115-10-6	7
3-METHYLPENTANE	96-14-0	3
2,3-DIMETHYLBUTANE	79-29-8	3
2,2-DIMETHYLBUTANE	75-83-2	1
HEXANE	110-54-3	.1

NOTE: The components of this product are in compliance with the chemical
 notification requirements of TSCA.

++ rosin, synthetic polymer, resin and antioxidant. Not hazardous
 according to Canadian WHMIS criteria. Non-WHMIS controlled.

THIS PRODUCT CONTAINS THE FOLLOWING TOXIC CHEMICAL OR CHEMICALS SUBJECT TO THE REPORTING
 REQUIREMENTS OF SECTION 313 OF TITLE III OF THE EMERGENCY PLANNING AND COMMUNITY
 RIGHT-TO-KNOW ACT OF 1986 AND 40 CFR PART 372:
 CYCLOHEXANE

Abbreviations: N/D - Not Determined N/A - Not Applicable CA - Approximately

MATERIAL SAFETY
DATA SHEET**3M**MSDS: 3M Super 77 Spray Adhesive
APRIL 30, 1998

PAGE: 2 of 6

1. INGREDIENT (continued)

THIS PRODUCT CONTAINS THE FOLLOWING TOXIC CHEMICAL OR CHEMICALS SUBJECT TO THE REPORTING REQUIREMENTS OF SECTION 313 OF TITLE III OF THE EMERGENCY PLANNING AND COMMUNITY RIGHT-TO-KNOW ACT OF 1986 AND 40 CFR PART 372:

HEXANE

2. PHYSICAL DATA

BOILING POINT:	Compressed gas
VAPOR PRESSURE:	Compressed gas
VAPOR DENSITY:	2.97 Air = 1
EVAPORATION RATE:	1.90 Ether = 1
SOLUBILITY IN WATER:	nil
SP. GRAVITY:	0.697 Water = 1
PERCENT VOLATILE:	75 % by wt
pH:	ca. 6.7
VISCOSITY:	N/A
MELTING POINT:	N/D
APPEARANCE AND ODOR:	liquid in aerosol, light cream colored, sweet/fruity odor.

3. FIRE AND EXPLOSION HAZARD DATA

FLASH POINT:	-42.00 F T.C.C.
FLAMMABLE LIMITS - LEL:	N/A
FLAMMABLE LIMITS - UEL:	Flamm. Gas
AUTOIGNITION TEMPERATURE:	N/D

EXTINGUISHING MEDIA:

Carbon dioxide, Dry chemical, Foam

SPECIAL FIRE FIGHTING PROCEDURES:

Wear full protective clothing, including helmet, self-contained, positive pressure or pressure demand breathing apparatus, bunker coat and pants, bands around arms, waist and legs, face mask, and protective covering for exposed areas of the head.

UNUSUAL FIRE AND EXPLOSION HAZARDS:

Closed containers exposed to heat from fire may build pressure and explode. Vapors may travel long distances along the ground or floor to an ignition source and flash back.

NFPA HAZARD CODES: HEALTH: 2 FIRE: 4 REACTIVITY: 0 AEROSOL STORAGE: 3

UNUSUAL REACTION HAZARD: none

OSHA FIRE HAZARD CLASS: Class IA Flammable Liquid

4. REACTIVITY DATA

STABILITY: Stable

INCOMPATIBILITY - MATERIALS TO AVOID:

Heat.

HAZARDOUS POLYMERIZATION: Will Not Occur

HAZARDOUS DECOMPOSITION PRODUCTS:

Carbon Monoxide and Carbon Dioxide, Toxic Vapors, Gases or Particulates.

MATERIAL SAFETY
DATA SHEET**3M**MSDS: 3M Super 77 Spray Adhesive
APRIL 30, 1998

PAGE: 3 of 6

5. ENVIRONMENTAL INFORMATION**SPILL RESPONSE:**

Refer to other sections of this MSDS for information regarding physical and health hazards, respiratory protection, ventilation, and personal protective equipment. Ventilate area. Extinguish all ignition sources. Cover with absorbent material. Collect using non-sparking tools. Place in a U.S. DOT-approved container.

RECOMMENDED DISPOSAL:

Incinerate in a permitted hazardous waste incinerator in the presence of a combustible material. Facility must be capable of handling aerosol cans. Dispose of empty cans in a sanitary landfill. Dispose of waste product in a facility permitted to accept chemical waste.

RECYCLE EMPTY AEROSOL CONTAINERS WHERE AVAILABLE.

ENVIRONMENTAL DATA:

Not determined.

REGULATORY INFORMATION:

Volatile Organic Compounds: 75 % tested per SCAQMD method 305.

Volatile Organic Compounds: ca. 4.4 lb/gal.

VOC Less H₂O & Exempt Solvents: 527 gms/liter tested per SCAQMD method 305.

Hazardous Air Pollutants: < 1 % by wt (0.04 lbs. HAPS/lbs Solids).

Since regulations vary, consult applicable regulations or authorities before disposal. U.S. EPA Hazardous Waste Number = D001 (Ignitable)

OTHER ENVIRONMENTAL INFORMATION:

HALOGEN ANALYSIS: The dry ingredients of 3M Super 77 Spray Adhesive were subjected to combustion in a Parr oxygen bomb. The decomposition products were analyzed by Ion Chromatographic analysis for halogen and sulfur content. Chlorine 0.05%; Fluorine <0.001%, Bromine <0.001%; Sulfur <0.035%.

EPCRA HAZARD CLASS:

FIRE HAZARD: Yes PRESSURE: Yes REACTIVITY: No ACUTE: Yes CHRONIC: Yes

6. SUGGESTED FIRST AID**EYE CONTACT:**

Immediately flush eyes with large amounts of water. Get immediate medical attention.

SKIN CONTACT:

Flush skin with large amounts of water. If irritation persists, get medical attention.

INHALATION:

Remove person to fresh air. If not breathing, give artificial respiration. If breathing is difficult, get immediate medical

3M Center
St. Paul, MN 55144-1000
1-800-364-3577 or (651) 737-6501 (24 hours)

**MATERIAL SAFETY
DATA SHEET**



PAGE: 4 of 6

attention.

Do not induce vomiting. Drink two glasses of water. Call a physician.

EYE PROTECTION:

Avoid eye contact with vapor, spray, or mist. Wear safety glasses with side shields.

SKIN PROTECTION:
Avoid prolonged or repeated skin contact.

Do not use in a confined area or areas with little or no air movement. If exhaust ventilation is not adequate, use appropriate respiratory protection. Provide ventilation adequate to control vapor concentrations below recommended exposure limits and/or control spray or mist.

Avoid breathing of vapors, mists or spray. Select one of the following NIOSH approved respirators based on airborne concentration of contaminants and in accordance with OSHA regulations: half-mask organic vapor respirator.

Do not ingest.

Store at temperatures below 120 degrees F (49 degrees C). Store out of direct sunlight. Keep out of the reach of children.

Aerosol container contains flammable gas under pressure. Keep away from heat, sparks, open flame, and other sources of ignition. Extremely flammable liquid and vapor. Do not pierce or burn container, even after use. No smoking while handling this material. Avoid static discharge.

INGREDIENTS		EXPOSURE LIMITS	VALUE	UNIT	TYPE AUTH	SKIN*
NON-VOLATILE COMPONENTS - N.J.						
TRADE SECRET (T.S.) REGISTRY NO.						
04499600-5776P++		NONE	NONE		NONE	NONE
CYCLOHEXANE		300	ppm		TWA	ACGIH
CYCLOHEXANE		300	ppm		TWA	OSHA

Abbreviations: N/D - Not Determined N/A - Not Applicable CA - Approximately

MATERIAL SAFETY
DATA SHEET**3M**MSDS: 3M Super 77 Spray Adhesive
APRIL 30, 1998

PAGE: 5 of 6

7. PRECAUTIONARY INFORMATION (continued)

INGREDIENTS	EXPOSURE LIMITS		UNIT	TYPE	AUTH	SKIN*
	VALUE					
2-METHYLPENTANE	500	ppm		TWA	ACGIH	
2-METHYLPENTANE	1000	ppm		STEL	ACGIH	
ISOBUTANE	NONE	NONE		NONE	NONE	
PROPANE	1000	ppm		TWA	OSHA	
PROPANE	NONE	NONE		NONE	ACGIH	
	Simple asphyxiant					
DIMETHYL ETHER	1000	ppm		TWA	CMRG	
DIMETHYL ETHER	500	ppm		TWA	AIHA	
DIMETHYL ETHER	942	mg/m3		TWA	AIHA	
3-METHYLPENTANE	500	ppm		TWA	ACGIH	
3-METHYLPENTANE	1000	ppm		STEL	ACGIH	
2,3-DIMETHYLBUTANE	500	ppm		TWA	ACGIH	
2,3-DIMETHYLBUTANE	1000	ppm		STEL	ACGIH	
2,2-DIMETHYLBUTANE	500	ppm		TWA	ACGIH	
2,2-DIMETHYLBUTANE	1000	ppm		STEL	ACGIH	
HEXANE	50	ppm		TWA	ACGIH	
HEXANE	50	ppm		TWA	OSHA	

* SKIN NOTATION: Listed substances indicated with "Y" under SKIN refer to the potential contribution to the overall exposure by the cutaneous route including mucous membrane and eye, either by airborne or, more particularly, by direct contact with the substance. Vehicles can alter skin absorption.

SOURCE OF EXPOSURE LIMIT DATA:

- ACGIH: American Conference of Governmental Industrial Hygienists
- AIHA: American Industrial Hygiene Assoc. Workplace Environmental Exposure Level
- OSHA: Occupational Safety and Health Administration
- CMRG: Chemical Manufacture Recommended Guidelines
- NONE: None Established

8. HEALTH HAZARD DATA**EYE CONTACT:**

Moderate Eye Irritation: signs/symptoms can include redness, swelling, pain, tearing, and hazy vision.

SKIN CONTACT:

Mild Skin Irritation (after prolonged or repeated contact): signs/symptoms can include redness, swelling, and itching.

INHALATION:

Intentional concentration and inhalation may be harmful or fatal.

Central Nervous System Depression: signs/symptoms can include headache, dizziness, drowsiness, incoordination, slowed reaction time, slurred speech, giddiness and unconsciousness.

Abbreviations: N/D - Not Determined N/A - Not Applicable CA - Approximately

3M General Offices

3M Center
St. Paul, MN 55144-1000
1-800-364-3577 or (651) 737-6501 (24 hours)

01-30
1859

MATERIAL SAFETY
DATA SHEET

3M

MSDS: 3M Super 77 Spray Adhesive
APRIL 30, 1998

PAGE: 6 of 6

8. HEALTH HAZARD DATA (continued)

Irritation (upper respiratory): signs/symptoms can include soreness of the nose and throat, coughing and sneezing.

WHILE THE FOLLOWING EFFECTS ARE ASSOCIATED WITH ONE OR MORE OF THE INDIVIDUAL INGREDIENTS IN THIS PRODUCT AND ARE REQUIRED TO BE INCLUDED ON THE MSDS BY THE U.S. OSHA HAZARD COMMUNICATION STANDARD, THEY ARE NOT EXPECTED EFFECTS DURING FORESEEABLE USE OF THIS PRODUCT.

Kidney Effects: signs/symptoms can include reduced urine volume, blood in urine and back pain.

Liver Effects: signs/symptoms can include yellow skin(jaundice) and tenderness of upper abdomen.

Peripheral Neuropathy: signs/symptoms can include tingling of extremities, incoordination, numbness, weakness and tremors.

IF SWALLOWED:

Ingestion is not a likely route of exposure to this product.

WHILE THE FOLLOWING EFFECTS ARE ASSOCIATED WITH ONE OR MORE OF THE INDIVIDUAL INGREDIENTS IN THIS PRODUCT AND ARE REQUIRED TO BE INCLUDED ON THE MSDS BY THE U.S. OSHA HAZARD COMMUNICATION STANDARD, THEY ARE NOT EXPECTED EFFECTS DURING FORESEEABLE USE OF THIS PRODUCT.

Ingestion may cause:

Irritation of Gastrointestinal Tissues: signs/symptoms can include pain, vomiting, abdominal tenderness, nausea, blood in vomitus, and blood in feces.

SECTION CHANGE DATES

HEADING	SECTION CHANGED SINCE FEBRUARY 20, 1998 ISSUE
---------	---

Abbreviations: N/D - Not Determined N/A - Not Applicable CA - Approximately

The information in this Material Safety Data Sheet (MSDS) is believed to be correct as of the date issued. 3M MAKES NO WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR COURSE OF PERFORMANCE OR USAGE OF TRADE. User is responsible for determining whether the 3M product is fit for a particular purpose and suitable for user's method of use or application. Given the variety of factors that can affect the use and application of a 3M product, some of which are uniquely within the user's knowledge and control, it is essential that the user evaluate the 3M product to determine whether it is fit for a particular purpose and suitable for user's method of use or application.

3M provides information in electronic form as a service to its customers. Due to the remote possibility that electronic transfer may have resulted in errors, omissions or alterations in this information, 3M makes no representations as to its completeness or accuracy. In addition, information obtained from a database may not be as current as the information in the MSDS available directly from 3M.

Certified Laboratories
PH 34317

CUSTOMER: T0143096 ORDER # : 0330a
BATCH #: 982650033 STICKER #: 982650901
ZONE #: RW05
BARCODE NUMBER: 124396360304050671
PR. NAME : TEKUSOLV AEROSOL (Hygroser)

SERIAL SAFETY DATA SHEET: TEKUSOLV AEROSOL PAGE : 1
00-000000- -5495) DATE OF ISSUE 09/02/98 | SUPERSEDES 08/08/97 |

SECTION I - GENERAL INFORMATION

CAL NAME & SYNONYMS TRADE NAME & SYNONYMS
ROLEUM/LIMONENE BLEND TEKUSOLV AEROSOL
CAL FAMILY : FORMULA
X <-- MIXTURE
ACTURE'S NAME:
FIED LABS, DIV. OF NCH CORP.
SS (NUMBER, STREET, CITY, STATE & ZIP CODE)
22170
G, TEXAS

Date 9-23-98 () New (X) Revised
(X) Technical (X) Maintenance
() Power Plant (X) WWTP
() Lab (X) #7 Office
(X) #5/6 Office (X) #8 Office (X) Main Gate
(X) Material Prep (X) Stores (X) Roll Wrap

ARED BY: | PRODUCT CODE NUMBER 5495 | EMERGENCY TELEPHONE NUMBER 972-438-1381
EW/CHEMIST

SECTION II - HAZARDOUS INGREDIENTS

HAZARDS PRESENTED BELOW ARE THOSE OF THE INDIVIDUAL COMPONENTS

ICAL NAME (INGREDIENTS) :
TREATED HEAVY NAPHTHA
HAZARD >--> COMB/IRR TLV >--> 300PPM 1 PEL >--> N/E 2.
STEL(TWA)* >--> NOT EST. CAS# >--> 64742-48-9
MONENE
HAZARD >--> COMB/IRR TLV >--> N/E 1 PEL >--> N/E 2.
STEL(TWA)* >--> NOT EST. CAS# >--> 5989-27-5
ANE
HAZARD >--> FLAMMABLE TLV >--> 1000PPM 1 PEL >--> 1000PPM 2.
(TWA)* >--> NOT EST. CAS# >--> 74-98-6
UT
>--> FLAMMABLE TLV >--> N/E 1 PEL >--> N/E 2.
(TWA)* >--> NOT EST. CAS# >--> 75-28-5

SECTION IIA - NON-HAZARDOUS INGREDIENTS

HAZARDOUS INGREDIENT NAMES AND CAS NUMBERS ARE PROTECTED UNDER NJ TRADE
ET REGISTRY # 409363 -5352

SECTION III - PHYSICAL DATA

ING PT. (F) | 340 | SPEC. GRAVITY (H2O=1) | 0.740
R PR. (MM HG) | 2000 | COLOR | CLEAR
R DENSITY | >1 | ODOR | CITRUS
B 100% | N/E | CLARITY | TRANSPARENT
LATILE BY VOL | 100 | EVAPORATION RATE
(BU A/C = 1) | <1
SOLUBILITY | INSOLUBLE
OSITY | NON-VISCOUS

SECTION IV - FIRE AND EXPLOSION HAZARD

POINT: 39 F. | FLAMMABLE LIMITS | 0.9 LEL | 7.0 UEL
C. | HYDROTREATED NAPHTHA
GUISHING MEDIA "ALCOHOL" X <-- CO2 X DRY X WATER
FOAM <-- FOAM X <-- CHEMICAL X <-- SPRAY <-- OTHER

AL FIRE FIGHTING PROCEDURES
IGHTERS SHOULD WEAR A SELF-CONTAINED BREATHING APPARATUS AND FULL
CTIVE GEAR. SPRAY EXPOSED AEROSOL CONTAINERS WITH WATER TO PREVENT
ING.

AND EXPLOSION HAZARDS
CARBON MONOXIDE, ALDEHYDES AND OTHER DECOMPOSITION PRODUCTS.
MAY EXPLODE WHEN HEATED.

HAZARD RATING (0=INSIGNIFICANT;1=SLIGHT;2=MODERATE;3=HIGH;4=EXTREME):
--HEALTH 4 <-- FLAMMABILITY 0 <-- REACTIVITY <-- SPECIAL

(CONTINUED) - SECTION IV - FIRE AND EXPLOSION HAZARD

SECTION V - HEALTH HAZARD DATA

THRESHOLD LIMIT VALUE:
NOT ESTABLISHED FOR MIXTURE. SEE SECTION II.

EFFECTS OF OVEREXPOSURE :

- ACUTE - (SHORT TERM EXPOSURE)
EYE CONTACT: CAUSES IRRITATION SUCH AS REDNESS AND TEARING.
SKIN CONTACT: MAY CAUSE IRRITATION AND MAY LEAD TO SENSITIZATION IN SOME INDIVIDUALS SENSITIVE TO PRODUCTS CONTAINING ORANGE OIL. FREQUENT OR PROLONGED SKIN CONTACT CAN LEAD TO REDNESS AND DERMATITIS.
INHALATION: MAY BE IRRITATING TO THE RESPIRATORY TRACT. INHALATION OF HIGH CONCENTRATIONS OF VAPOR DUE TO ELEVATED TEMPERATURES CAN CAUSE NETHESIA, DROWSINESS, UNCONSCIOUSNESS, CNS EFFECTS AND DEATH.
INGESTION: SMALL AMOUNTS OF THIS PRODUCT ASPIRATED INTO THE RESPIRATORY SYSTEM DURING INGESTION OR VOMITING MAY CAUSE MILD TO SEVERE PULMONARY INJURY, POSSIBLY PROGRESSING TO DEATH.

- CHRONIC - (LONG TERM EXPOSURE)
REPEATED AND PROLONGED SKIN CONTACT MAY BE IRRITATING AND CAUSE SENSITIZATION IN PREVIOUSLY EXPOSED INDIVIDUALS.
MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE ARE PRE-EXISTING RESPIRATORY AND SKIN CONDITIONS SUCH AS ASTHMA, EMPHYSEMA, AND DERMATITIS.
TARGET ORGANS: LIVER, BLOOD-FORMING ORGANS AND KIDNEYS

PRIMARY ROUTE OF ENTRY: X<-- INHALATION <-- INGESTION <-- ABSORPTION

EMERGENCY & FIRST AID PROCEDURES

INHALATION :
REMOVE FROM THE AREA TO FRESH AIR. SEEK MEDICAL ATTENTION IF RESPIRATORY IRRITATION DEVELOPS OR IF BREATHING BECOMES DIFFICULT.

EYE CONTACT:
WASH THE EYES WITH WATER. REMOVE ANY CONTACT LENSES AND CONTINUE FLUSHING WITH PLenty OF WATER FOR SEVERAL MINUTES. SEEK MEDICAL ATTENTION IF IRRITATION DEVELOPS.

SKIN CONTACT:
WASH AFFECTED AREAS WITH PLenty OF SOAP AND WATER FOR SEVERAL MINUTES. SEEK MEDICAL ATTENTION IF IRRITATION DEVELOPS.

INGESTION :
GIVE 3 TO 4 GLASSES OF WATER, BUT DO NOT INDUCE VOMITING. IF VOMITING OCCURS, GIVE FLUIDS AGAIN. SEEK MEDICAL ATTENTION IF DISCOMFORT OCCURS.

NOTES TO PHYSICIAN :
INGESTION AND SUBSEQUENT VOMITING OF THIS PRODUCT CAN LEAD TO ASPIRATION OF THE PRODUCT INTO THE LUNGS WHICH CAN CAUSE DAMAGE AND MAY BE FATAL.

SECTION VI - TOXICITY INFORMATION

PRODUCT CONTAINS CHEMICAL LISTED AS CARCINOGEN OR POTENTIAL CARCINOGEN BY:

ARC <--YES NTP <--YES OSHA <--YES ACGIH <--YES OTHER <--YES
X<--NO NTP X<--NO OSHA X<--NO ACGIH X<--NO OTHER X<--NO

PROTREATED HEAVY NAPHTHA
L-RAT LD50: >5G/KG 4.
N-RBT LD50: >3.16G/KG 4.
LABORATORY ANIMAL STUDIES HAVE SHOWN THAT PROLONGED AND REPEATED INHALATION EXPOSURE TO LIGHT HYDROCARBON VAPORS IN THE SAME NAPHTHA BOILING RANGE AS IS CONSTITUENT CAN PRODUCE ADVERSE KIDNEY EFFECTS IN MALE RATS. THESE EFFECTS WERE NOT OBSERVED IN SIMILAR STUDIES WITH FEMALE RATS AND BOTH SEXES OF MICE AND IN LIMITED STUDIES WITH OTHER ANIMAL SPECIES. IN A NUMBER OF HUMAN STUDIES, THERE WAS NO EVIDENCE OF SUCH EFFECTS AT NORMAL OCCUPATIONAL LEVELS. IT IS THEREFORE HIGHLY UNLIKELY THAT THE EFFECTS IN MALE RATS HAVE SIGNIFICANT IMPLICATIONS FOR HUMANS EXPOSED AT OR BELOW COMMENDED VAPOR LIMITS IN THE WORKPLACE.
LIMONENE
L-RAT LD50: 4400MG/KG 3. INV-MUS LD50: 110MG/KG 3.
L-MUS LD50: 5600MG/KG 3. SCU-MUS LD50: 3170MG/KG 3.
R-MUS LD50: 600MG/KG 3.
PRODUCTIVE/TETERAGENTIC EFFECTS IN SOME ANIMAL STUDIES 3.

SECTION VII - REACTIVITY DATA

ABILITY | X <--STABLE <--UNSTABLE | CONDITIONS TO AVOID

AVOID HEAT, HOT SURFACES, SPARKS AND OPEN FLAMES.

COMPATABILITY (MATERIALS TO AVOID) :
STRONG OXIDIZERS, SUCH AS CHLORINE, IODINE, ECT.

(CONTINUED) - SECTION VII - REACTIVITY DATA

HAZARDOUS DECOMPOSITION PRODUCTS
GASES, FUMES, OXIDES OF CARBON, ALDEHYDES.

HAZARDOUS POLYMERIZATION	WILL NOT X <-- OCCUR		MAY <-- OCCUR		CONDITIONS TO AVOID
	N/A				

SECTION VIII - SPILL OR LEAK PROCEDURES

ACTIONS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED:
1. REMOVE AND ELIMINATE ALL IGNITION SOURCES.
2. TO THE NATURE OF THE AEROSOL PACKAGING, A LARGE SPILL IS UNLIKELY. FOR
ALL SPILLS, ABSORB WITH AN INERT MATERIAL AND TRANSFER ALL MATERIAL
TO A PROPERLY LABELED CONTAINER FOR DISPOSAL. WEAR APPROPRIATE PROTECTIVE
CLOTHING.

DISPOSAL METHOD(S):
DISPOSE OF ACCORDING TO ALL LOCAL, STATE, AND FEDERAL REGULATIONS.

HAZARDOUS AGENT :

SECTION IX - SPECIAL PROTECTION INFORMATION

REQUIRED VENTILATION :

NATURAL EXHAUST IS USUALLY ADEQUATE. USE LOCAL EXHAUST IF TLV IS EXCEEDED.

PERSONAL PROTECTION :
ALL PERSONNEL WORKING AT AMBIENT TEMPERATURES
NEED A SUPPLIED-AIR DEVICE OR SOLVENT TYPE RESPIRATOR IF HANDLED IN POORLY
VENTILATED AREAS.

SKIN PROTECTION :
NEOPRENE RUBBER OR NITRILE GLOVES SHOULD BE WORN.

PROTECTION :
EYE GLASSES WITH SIDE SHIELDS IF THE METHOD OF
APPLICATION PRESENTS THE LIKELIHOOD OF EYE CONTACT.

RESPIRATORY PROTECTION :
PROTECTIVE CLOTHING WHEN HANDLING.

SECTION X - STORAGE AND HANDLING INFORMATION

STORAGE TEMPERATURE	INDOOR	HEATED	REFRIGERATED	OUTDOOR
MAX: 120 F. MIN: 0 F.	X			

PRECAUTIONS TO BE TAKEN IN HANDLING & STORING
1. WITH CAUTION AROUND HEAT, SPARKS, PILOT
LAMP, STATIC ELECTRICITY AND OPEN FLAME.

PRECAUTIONS
1. KEEP OUT OF REACH OF CHILDREN. READ THE ENTIRE
LABEL BEFORE USING THE PRODUCT. FOLLOW THE LABEL
DIRECTIONS.

SECTION XI - REGULATORY INFORMATION

REGULATORY NAME	C.A.S NUMBER	UPPER % LIMIT

1. ELEMENTS LISTED ABOVE ARE SUBJECT TO THE REPORTING REQUIREMENTS OF
SECTION 311 OF THE SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT OF
1980 AND 40 CFR PART 372.

(CONTINUED) - SECTION XI - REGULATORY INFORMATION

IF UE (USE EXEMPTION) APPEARS UNDER UPPER % LIMIT, END USERS ARE EXEMPT FROM NOTIFICATION BECAUSE THE PRODUCT IS USED AND LABELED FOR ROUTINE JANITORIAL WORK, OR THE PRODUCT IS USED AND LABELED FOR FACILITY GROUNDS MAINTENANCE (SUCH AS FERTILIZERS AND HERBICIDES), OR THE PRODUCT IS USED AND LABELED FOR MAINTAINING MOTOR VEHICLES.

CALIFORNIA PROPOSITION 65

WARNING: THIS PRODUCT CONTAINS THE FOLLOWING CHEMICAL(S) KNOWN TO THE STATE OF CALIFORNIA TO CAUSE (1)CANCER OR (2)BIRTH DEFECTS OR OTHER REPRODUCTIVE HARM:

NONE

SECTION XII - TRANSPORTATION * (FOR FUTURE USE)

ABELS	LIMITED QTY
NIT CONTAINER	
OT SPS CONTAINER	NET EXPLOSIVE WT.
EROSOL PROPELLANT(S)	

SECTION XIII - REFERENCES

THRESHOLD LIMIT VALUES FOR CHEMICAL SUBSTANCES AND PHYSICAL AGENTS AND BIOLOGICAL EXPOSURE INDICES, ACGIH, 1997.

OSHA PEL
SAX'S DANGEROUS PROPERTIES OF INDUSTRIAL MATERIALS, EIGHTH EDITION, RICHARD J. LEWIS, SR.
VENDOR'S MSDS

ALL OF THE COMPONENTS WITHIN THIS PRODUCT CAN BE FOUND IN THE CURRENT TSCA INVENTORY.

RR:IRRITANT, FLAM/FLAMM:FLAMMABLE, COMB:COMBUSTIBLE, CORR:CORROSIVE
ARC:CARCINOGENIC, TOX:TOXIC, N/A:NOT APPLICABLE, N/E:NOT ESTABLISHED
OC:CLEVELAND OPEN CUP, PMCC:PENSKY-MARTIN CLOSED CUP, ICC:TAGLIABUE CLOSED CUP
JP, LEL:LOWER EXPLOSION LIMIT, UEL:UPPER EXPLOSION LIMIT, NFPA:NATIONAL FIRE PROTECTION ASSOCIATION, IARC:INTERNATIONAL AGENCY FOR THE RESEARCH ON CANCER, NTP:NATIONAL TOXICOLOGY PROGRAM, OSHA:OCCUPATIONAL SAFETY & HEALTH ADMINISTRATION, ACGIH:AMERICAN CONFERENCE OF GOVERNMENTAL INDUSTRIAL HYGIENISTS, TLV:THRESHOLD LIMIT VALUE, PEL:PERMISSIBLE EXPOSURE LEVEL, TEL:SHORT-TERM EXPOSURE LIMIT, MLD:MILD, MOD:MODERATE, SEV:SEVERE.

SHORT TERM EXPOSURE LIMIT (TWA) LISTED AS FINAL RULE LIMITS PUBLISHED IN THE FEDERAL REGISTER/VOL. 54 NO. 12, 1-19-89

THE INFORMATION CONTAINED HEREIN IS BASED ON DATA CONSIDERED ACCURATE IN LIGHT OF CURRENT FORMULATION. HOWEVER, NO WARRANTY IS EXPRESSED OR IMPLIED REGARDING THE ACCURACY OF THIS DATA OR THE RESULTS TO BE OBTAINED FROM THE USE THEREOF.

CERTIFIED LABS. DIV. OF NCH CORP. ASSUMES NO RESPONSIBILITY FOR PERSONAL INJURY OR PROPERTY DAMAGE CAUSED BY THE USE, STORAGE OR DISPOSAL OF THE PRODUCT IN A MANNER NOT RECOMMENDED ON THE PRODUCT LABEL. USERS ASSUME ALL RISKS ASSOCIATED WITH SUCH UNRECOMMENDED USE, STORAGE, OR DISPOSAL OF THE PRODUCT.

CRC MATERIAL SAFETY DATA SHEET **SILCO**

CRC Industries, Inc. • 885 Louis Drive • Warminster, PA 18974 • (215) 674-4300

FOR 24 HR. EMERGENCY INFORMATION CALL CHEMTREC 1-800-424-9300

PRODUCT NAME: CHAIN & WIRE ROPE LUBE AEROSOL #-MSDS03050

PRODUCT- 3050

(Page 1 of 2)

1. INGREDIENTS	CAS #	ACGIH TLV	OSHA PEL	OTHER LIMITS	%
Acrylic copolymer	68171-50-6	NA	NA		4-8
Oils	--	5 mg/m3	5 mg/m3	(mist)	1-4
Organo molybdenum	68958-92-9	NA	NA		1-3
Isohexanes	107-83-5	500 ppm	500 ppm		60-70
n-Hexane	110-54-3	50 ppm	50 ppm		5-10
Propane	74-98-6	NA	1000 ppm		10-20
Isobutane	75-28-5	NA	NA	1000ppm	10-20

2. PHYSICAL DATA : without propellant

Specific Gravity : .683

Vapor Pressure : ND

% Volatile : 90

Boiling Point : 141 F (initial)

Evaporation Rate : NA

Freezing Point : ND

Vapor Density : 4.5 (air=1)

Appearance and Odor:

pH: NA

Light blue liquid. Solvent odor.

Solubility : Not soluble in water.

3. FIRE AND EXPLOSION DATA

Flashpoint : <20 F Method : TCC

Flammable Limits : propellant LEL:1.8 UEL:9.5

Extinguishing Media : Foam, CO2, dry chemical

Unusual Hazards : Aerosol containers may explode when heated above 120F.

4. REACTIVITY AND STABILITY

Stability : Stable

Hazardous decomposition products

: Thermal--carbon dioxide, carbon monoxide

Materials to avoid : Strong oxidizers

5. PROTECTION INFORMATION

Ventilation : Maintain vapor concentration below TLV. Use mechanical means if necessary.

Respiratory : Use self-contained breathing apparatus above the TLV.

Gloves : Solvent resistant

Eye & Face : Safety goggles

Other Protective Equipment: Not normally required with aerosol product usage.

Date 1-2-97
☒ Technical
☐ Power Plant
☐ Lab
☒ #5/6 Office
☒ Material Prep
☐ Stores
☒ Roll Wrap
☒ Maintenance
☒ WWTP
☒ #7 Office
☒ #8 Office
☐ New
☐ Revised

MATERIAL SAFETY DATA SHEET

PRODUCT NAME : CHAIN & WIRE ROPE LUBE AEROSOL #-MSDS03050

PRODUCTS- 3050

MANUFACTURED BY : CRC INDUSTRIES, INC.

PHONE (215) 674-4300

895 LOUIS DRIVE, WARMINSTER, PA. 18974

(Page 2 of 2)

6. HEALTH HAZARD DATA

Primary Routes of Entry : Inhalation, Skin

Signs and Symptoms of Exposure

1. Acute Overexposure:

Eyes- Burning and Irritation. Skin- Mild irritation.
Inhalation- Irritation of respiratory tract, dizziness,
headaches, central nervous system depression.

2. Chronic overexposure: Repeated overexposure may cause harm to the nervous system.

Medical Conditions Generally Aggravated by Exposure
: Pre-existing lung disorders.

Chemical Listed as Carcinogen : No	National Toxicology Program
or Potential Carcinogen : No	IARC Monographs
: No	OSHA

Emergency and First Aid Procedures : (If symptoms persist, call a physician)

1. Inhalation : Remove to fresh air. Apply artificial respiration if necessary.
2. Eyes : Flush with large amounts of water for 15 minutes.
3. Skin : Wash area thoroughly with soap and water.
4. Ingestion : DO NOT induce vomiting. Call a physician.

7. SPILL OR LEAK PROCEDURES

Precautions to be taken : Store in a cool, dry area.
in Handling and Storage

Steps to be taken in case : Usually not a problem with aerosols. Remove
Material is released or sources of ignition, ventilate area, absorb liquid
spilled with inert material and store in closed container

Waste Disposal : All used and unused Product should be disposed of in
conformance with local, state and federal regulations.

8. SPECIAL PRECAUTIONS AND USE DIRECTIONS :

Propane and isobutane are aerosol propellents. Pressure = 55 psig
@ 70 F. Aerosol cans may explode if heated above 120 F.
Vapors are heavier than air and will collect in low areas.

9. NFPA HAZARD RATINGS Health:2 Flammability:4 Reactivity:0

10. SARA Information

This product contains NO chemicals that are subject to
release reporting under section 313 of SARA Title III.

PREPARED BY: Jon Brown

ORIGINAL DATE or DATE OF REVISION: 11/16/92

Marshall E. Campbell Co.
2975 Lapeer Road
Port Huron, MI 48060

CRC MATERIAL SAFETY DATA SHEET

CRC Industries, Inc. • 885 Louis Drive • Warminster, PA 18974 • (215) 674-4300

FOR 24 HR. EMERGENCY INFORMATION CALL CHEMTREC 1-800-424-9300

PRODUCT NAME: CUTTING OIL AEROSOL

#-MSDS14050

PRODUCT- 14050

(Page 1 of 2)

1. INGREDIENTS	CAS #	ACGIH TLV	OSHA PEL	OTHER LIMITS	%
Lube Oil 500 SUS	64742-52-5	5 mg/m3	5 mg/m3	(mist)	60-70
Organic Lubricant Additives	-	NA	NA		5-10
100 SUS Paraffinic Oil	64742-54-7	5 mg/m3	5 mg/m3	(mist)	4-6
Propane	74-98-6	NA	1000 ppm		5-13
Isobutane	75-28-5	NA	NA	1000ppm	5-13

2. PHYSICAL DATA : without propellant

Specific Gravity : 0.9244

Vapor Pressure : ND

% Volatile : 20

Boiling Point : ND

Evaporation Rate : NA

Freezing Point : ND

Vapor Density : ND

Appearance and Odor:

pH: NA

A brown liquid with a lubricating oil odor.

Solubility : Not soluble in water, but soluble in most organic solvents.

3. FIRE AND EXPLOSION DATA

Flashpoint : <20 F Method : TCC

Flammable Limits : propellant LEL:1.8 UEL:9.5

Extinguishing Media : CO2, dry chemical, foam

Unusual Hazards : Propellant is a flammable gas; however it quickly dissipates after application.

4. REACTIVITY AND STABILITY

Stability : Stable

Hazardous decomposition products

: (Thermal)--CO2, carbon monoxide, oxides of sulphur

Materials to avoid : Strong oxidizing agents

5. PROTECTION INFORMATION

Ventilation : Adequate to maintain vapor concentration below TLV

Respiratory : Self-contained breathing apparatus above TLV

Gloves : Oil resistant

Eye & Face : Safety goggles

Other Protective Equipment: Not normally required for aerosol product usage.

(X) Technical (X) Maintenance

) Power Plant (X) WWTP

) Lab (X) #7 Office

(X) #5/6 Office (X) #8 Office

(X) Material Prep (X) Stores (X) Roll Wrap

ETY DATA SHEET

PRODUCT NAME : CUTTING OIL AEROSOL

#-MSDS14050

PRODUCTS- 14050

MANUFACTURED BY : CRC INDUSTRIES, INC.

PHONE (215) 674-4300

885 LOUIS DRIVE, WARMINSTER, PA. 18974

(Page 2 of 2)

6. HEALTH HAZARD DATA

Primary Routes of Entry : Inhalation, Skin

Signs and Symptoms of Exposure

1. Acute Overexposure:

Eyes: may cause burning and irritation. Skin: excessive contact may cause drying. Inhalation: mist may cause breathing problems. Vapors may cause headaches and nausea.

2. Chronic overexposure: Prolonged exposure to skin may cause dermatitis.

Medical Conditions Generally Aggravated by Exposure : NA

Chemical Listed as Carcinogen : No
or Potential Carcinogen : No

National Toxicology Program
IARC Monographs
OSHA

Emergency and First Aid Procedures : (If symptoms persist, call a physician)

1. Inhalation : Remove to fresh air. Apply artificial respiration if necessary.

2. Eyes : Flush with water for 15 minutes.

3. Skin : Remove contaminated clothing. Wash exposed area with soap and water.

4. Ingestion : DO NOT induce vomiting. Call a doctor.

7. SPILL OR LEAK PROCEDURES

Precautions to be taken : Store in a cool, dry area.
in Handling and Storage

Steps to be taken in case : Usually not a problem with aerosols. Ventilate
Material is released or area. Remove sources of ignition. Use absorbent
spilled material to pick up waste material.

Waste Disposal : All used and unused Product should be disposed of in
conformance with local, state and federal regulations.

8. SPECIAL PRECAUTIONS AND USE DIRECTIONS :

Propane and isobutane serve as aerosol propellents. Pressure=45 psig @ 70 F. Aerosol cans may explode if heated above 120 F.
OSHA short term exposure limit (STEL) for oil is 10 mg/m3.

9. NFPA HAZARD RATINGS

Health:2 Flammability:4 Reactivity:0

10. SARA Information

This product contains NO chemicals that are subject to
release reporting under section 313 of SARA Title III.

PREPARED BY: Jon Brown

ORIGINAL DATE or DATE OF REVISION: 04/27/93



MATERIAL SAFETY DATA SHEET



CRC Industries, Inc. • 885 Louis Drive • Warminster, PA 18974 • (215) 674-4300

FOR 24 HR. EMERGENCY INFORMATION CALL CHEMTREC 1-800-424-9300

PRODUCT NAME WHITE LITHIUM GREASE AEROSOL #MSDS03080

PRODUCT-03080

(Page 1 of 2)

1. INGREDIENTS	CAS #	ACGIH TLV	OSHA PEL	OTHER LIMITS	%
Mineral Oil (heavy)	64741-96-4	5 mg/m3	5 mg/m3	(mist)	25-35
Dichloromethane	75-09-2	50 ppm	500 ppm		30-40
Isobutane	75-28-5	NA	NA	1000ppm	10-20
Propane	74-98-6	NA	1000 ppm		10-20
Isohexanes	107-83-5	500 ppm	500 ppm		10-20
n-Hexane	110-54-3	50 ppm	50 ppm		0-10

2. PHYSICAL DATA : (without propellant)

Specific Gravity : 0.959

Vapor Pressure : NA

% Volatile : 77

Boiling Point : 141 F (initial)

Evaporation Rate : NA

Freezing Point : NA

Vapor Density : > air

Appearance and Odor:

pH: NA

Off-white viscous material-solvent odor.

Solubility : Not soluble in water.

3. FIRE AND EXPLOSION DATA

Flashpoint : <20 F Method : COC

Flammable Limits : ND LEL: UEL:

Extinguishing Media : Foam, Water fog, CO2.

Unusual Hazards : Aerosol containers may explode when heated above 120 F.

4. REACTIVITY AND STABILITY

Stability : Stable

Hazardous decomposition products

: Thermal - carbon dioxide, carbon monoxide

Materials to avoid : Strong oxidizers.

5. PROTECTION INFORMATION

Ventilation : Maintain vapor concentration below the TLV. Use mechanical means if necessary.

Respiratory : Use self contained breathing apparatus above the TLV.

Gloves : Solvent resistant

Eye & Face : Safety goggles

Other Protective Equipment: Not normally required for aerosol product usage.

Date 4-2-97
(X) Technical (X) Maintenance
() Power Plant (X) WWTP
(X) Lab (X) #7 Office
(X) #5/6 Office (X) #8 Office
(X) Material Prep (X) Stores (X) Roll Wrap

MATERIAL SAFETY DATA SHEET

PRODUCT NAME : WHITE LITHIUM GREASE AEROSOL # -MSDS03080
PRODUCTS-03080

MANUFACTURED BY : CRC INDUSTRIES, INC.

885 LOUIS DRIVE, WARMINSTER, PA. 18974

PHONE (215) 674-4300

(Page 2 of 2)

6. HEALTH HAZARD DATA

Primary Routes of Entry : Inhalation, Skin

Signs and Symptoms of Exposure

1. Acute Overexposure:

Eyes- Burning and Irritation. Skin- Mild irritation.
Inhalation- Irritation of respiratory tract, dizziness,
headaches, central nervous system depression.

2. Chronic overexposure: Repeated overexposure may cause harm to the
nervous system.

Medical Conditions Generally Aggravated by Exposure
: Pre-existing lung disorders.

Chemical Listed as Carcinogen : Yes National Toxicology Program
or Potential Carcinogen : Yes IARC Monographs
: Yes OSHA

Emergency and First Aid Procedures : (If symptoms persist, call a physician)

1. Inhalation : Remove to fresh air. Apply artificial respiration
if necessary.

2. Eyes : Flush with large amounts of water for 15 minutes.

3. Skin : Wash area thoroughly with soap and water.

4. Ingestion : DO NOT induce vomiting. Call a physician.

7. SPILL OR LEAK PROCEDURES

Precautions to be taken : Store in a cool, dry area.
in Handling and Storage

Steps to be taken in case : Ventilate area. Remove sources of ignition. Absorb
Material is released or liquid with inert material. Caution- Surface may
spilled be slippery.

Waste Disposal : All used and unused Product should be disposed of in
conformance with local, state and federal regulations.

8. SPECIAL PRECAUTIONS AND USE DIRECTIONS :

Propane and isobutane are aerosol propellants: Pressure=45 psig @ 70F.
Aerosol cans may explode when heated above 120 F. Solvent vapors are
heavier than air and will collect in low areas. Be sure to use
adequate ventilation.

9. NFPA HAZARD RATINGS

Health:2 Flammability:4 Reactivity:0

10. SARA Information

This product contains the following chemicals that are subject to release
reporting under Section 313 of SARA Title III.

Chemical Name	CAS-#	Percent
Dichloromethane	75-09-2	30-40
n-Hexane	110-54-3	0-10

PREPARED BY: Adam Selisker ORIGINAL DATE or DATE OF REVISION: 04/11/00 Marshall E. Campbell Co.
2975 Lapeer Road
Port Huron, MI 48060

M A T E R I A L S A F E T Y D A T A S H E E T

SECTION 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME : SPRAY 'N GO VOC - ALUMINUM
 UPC NUMBER : 56100

PRODUCT USE/CLASS : Aerosol Paint

MANUFACTURER: 24 HOUR EMERGENCY:
 DAF INC. TRANSPORTATION: 1-800-535-5053 (352-323-3500)
 2400 BOSTON STREET MEDICAL : 1-800-327-3874 (513-558-5111)
 BALTIMORE, MD 21224

PREPARE DATE : 07/17/1996 GENERAL INFORMATION:
 REVISION NO. : 3 DAP INC. : 1-888-DAP-TIPS (1-888-327-8477)
 REVISION DATE: 12/30/1999

SECTION 2 - COMPOSITION/INFORMATION ON INGREDIENTS

ITEM	CHEMICAL NAME	CAS NUMBER	WT/WT % RANGE
01	N-butane	106-97-8	15.0-20.0 %
02	Propane	74-98-6	15.0-20.0 %
03	Aluminum Flake	7429-90-5	5.0-10.0 %
04	Mineral spirits	8052-41-3	45.0-50.0 %

ITEM	ACGIH		OSHA		COMPANY	SKIN
	TLV-TWA	TLV-STEL	PEL-TWA	PEL-CEILING	TLV-TWA	
01	800 ppm	N.E.	800 ppm	N.E.	N.E.	NO
02	1000 ppm	N.E.	1000 ppm	N.E.	N.E.	NO
03	10 mg/m3	N.E.	15 mg/m3	N.E.	N.E.	NO
04	100 ppm	N.E.	100 ppm	N.E.	N.E.	NO

(See Section 16 for abbreviation legend)

Remaining ingredients are not considered hazardous per the OSHA Hazard Communication Standard.

Listed Permissible Exposure Levels (PEL) are from the U.S. Dept. of Labor OSHA Final Rule Limits (CFR 29 1910.1000); limits may vary between states.

Date 6-8-00 () New (X) Revised

(X) Technical (X) Maintenance
 () Power Plant (X) WWTP
 () Lab (X) #7 Office
 (X) #5/6 Office (X) #8 Office (X) Main Gate
 (X) Material Prep (X) Stores (X) Roll Wrap

(Continued on Page 2)

Product Name: SPRAY 'N GO VOC - ALUMINUM
Revision Date: 12/30/1999

Page 2

SECTION 3 - HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW: DANGER! Extremely flammable liquid and vapor. Vapor harmful. Harmful or fatal if swallowed. Contents under pressure. Harmful if inhaled. Exposure to temperatures above 120 degrees F. may cause can to rupture.

POTENTIAL HEALTH EFFECTS:

EFFECTS OF OVEREXPOSURE - EYE CONTACT: May cause eye irritation.

EFFECTS OF OVEREXPOSURE - SKIN CONTACT: May irritate skin. Prolonged or repeated contact can result in defatting and drying of the skin which may result in skin irritation and dermatitis (rash).

EFFECTS OF OVEREXPOSURE - INHALATION: Vapor harmful if inhaled. Vapor may cause nose and throat irritation. Vapor inhalation may affect the brain or nervous system causing dizziness, headache or nausea. Inhalation of high concentrations of vapor is harmful and may lead to heart irregularities.

EFFECTS OF OVEREXPOSURE - INGESTION: This material may be harmful or fatal if swallowed. Aspiration of material into the lungs due to vomiting can cause chemical pneumonitis which can be fatal. If ingested, this product may cause vomiting, diarrhea, and depressed respiration.

EFFECTS OF OVEREXPOSURE - CHRONIC HAZARDS: Reports have associated permanent brain and nervous system damage with prolonged and repeated occupational overexposure to solvents. Symptoms include: loss of memory, loss of intellectual ability, and loss of coordination.

MEDICAL CONDITIONS WHICH MAY BE AGGRAVATED BY CONTACT: If dry sanded, asthma and asthma-like conditions may worsen from prolonged or repeated exposure to dust.

PRIMARY ROUTE(S) OF ENTRY: SKIN CONTACT INHALATION

SECTION 4 - FIRST AID MEASURES

EYE CONTACT: Flush with large quantities of water until irritation subsides. Contact a physician.

SKIN CONTACT: Wash with soap and water.

INHALATION: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Contact a physician immediately.

(Continued on Page 3)

Product Name: SPRAY 'N GO VOC - ALUMINUM
Revision Date: 12/30/1999

Page 3

SECTION 4 - FIRST AID MEASURES

INGESTION: DO NOT INDUCE VOMITING. Contact a physician or Regional Poison Control Center immediately.

COMMENTS: None.

SECTION 5 - FIRE FIGHTING MEASURES

FLASH POINT: Aerosol. Extremely flammable. LOWER EXPLOSIVE LIMIT: N.A.
UPPER EXPLOSIVE LIMIT: N.A.

AUTOIGNITION TEMPERATURE: N.E.

EXTINGUISHING MEDIA: CO2 DRY CHEMICAL FOAM

UNUSUAL FIRE AND EXPLOSION HAZARDS: Containers may explode if exposed to extreme heat. Eliminate sources of ignition: heat, electrical equipment, sparks, and flames. Do not put in contact with oxidizing or caustic materials.

SPECIAL FIREFIGHTING PROCEDURES: Full protective equipment, including self-contained breathing apparatus, is recommended to protect from combustion products. Cool exposed containers with water.

SECTION 6 - ACCIDENTAL RELEASE MEASURES

SPILL OR LEAK PROCEDURES: Use absorbent material or scrape up dried material and place into containers.

SECTION 7 - HANDLING AND STORAGE

HANDLING INFORMATION: KEEP OUT OF REACH OF CHILDREN. Avoid skin and eye contact. Avoid breathing vapors. Use only in a well ventilated area. Make sure nozzle arrow is directed away from yourself prior to discharge.

STORAGE INFORMATION: Store away from caustics and oxidizers. Keep away from heat, spark, and flame. Keep containers tightly closed when not in use. Keep containers from excessive heat and freezing. Do not store at temperatures above 120 degrees F.

OTHER PRECAUTIONS: Intentional misuse by deliberately concentrating and inhaling vapors may be harmful or fatal. Do not take internally.

(Continued on Page 4)

Product Name: SPRAY 'N GO VOC - ALUMINUM
Revision Date: 12/30/1999

Page 4

SECTION 8 - EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS: Provide sufficient mechanical ventilation (local or general exhaust) to maintain exposure below PEL and TLV. Vapors are heavier than air and will collect in low areas. Check all low areas (basements, sumps, etc.) for vapors before entering.

RESPIRATORY PROTECTION: If 8 hour exposure limit or value is exceeded for any component, use an approved NIOSH/OSHA respirator. Consult your safety equipment supplier and the OSHA regulation, 29 CFR 1910.134 for respirator requirements. A respiratory protection program that meets OSHA 1910.134 and ANSI Z88.2 requirements must be followed whenever workplace conditions warrant a respirator's use.

EYE PROTECTION: Goggles or safety glasses with side shields.

SKIN PROTECTION: Solvent impervious gloves.

OTHER PROTECTIVE EQUIPMENT: None.

HYGIENIC PRACTICES: Remove contaminated clothing and wash before reuse.

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

BOILING RANGE	: N.A.	VAPOR DENSITY	: Is heavier than air
ODOR	: Gasoline-like		
APPEARANCE	: Opaque liquid	EVAPORATION RATE:	Is faster than Butyl Acetate
SOLUBILITY IN H2O	: Negligible		
SPECIFIC GRAVITY	: 0.7635		
VAPOR PRESSURE	: N.A.		
PHYSICAL STATE	: Liquid		

(See Section 16 for abbreviation legend)

SECTION 10 - STABILITY AND REACTIVITY

CONDITIONS TO AVOID: Excessive heat and freezing.

INCOMPATIBILITY: Strong oxidizers and caustics.

HAZARDOUS DECOMPOSITION PRODUCTS: Normal decomposition products, i.e. COx, NOx

HAZARDOUS POLYMERIZATION: Will not occur under normal conditions.

STABILITY: This product is stable under normal storage conditions.

(Continued on Page 5)

Product Name: SPRAY 'N GO VOC - ALUMINUM
Revision Date: 12/30/1999

Page 5

SECTION 11 - TOXICOLOGICAL PROPERTIES

No product or component toxicological information is available.

SECTION 12 - ECOLOGICAL INFORMATION

No information.

SECTION 13 - DISPOSAL CONSIDERATIONS

WASTE MANAGEMENT/DISPOSAL: Dispose of according to Federal, State, and Local Standards. Use all material before disposal. If unable to use entire contents of can, relieve pressure in container until it equals external pressure. Incineration of this can without first relieving all pressure may result in an explosion and personal injury. Responsibility for proper waste disposal is with the owner of the waste.

EPA WASTE CODE - If discarded (40 CFR 261): D001-Ignitable(if residue remains).

SECTION 14 - TRANSPORTATION INFORMATION

DOT PROPER SHIPPING NAME: Consumer Commodity

DOT HAZARD CLASS: ORM-D

DOT UN/NA NUMBER: NONE PACKING GROUP: NONE RESP. GUIDE PAGE: 171

SECTION 15 - REGULATORY INFORMATION

U.S. FEDERAL REGULATIONS: AS FOLLOWS -

OSHA: Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200)

SARA SECTION 313:

This product contains the following substances subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372:

----- CHEMICAL NAME -----

CAS NUMBER

WT/WT RANGE

No SARA Section 313 components exist in this product.

(Continued on Page 6)

Product Name: SPRAY 'N GO VOC - ALUMINUM
Revision Date: 12/30/1999

Page 5

SECTION 15 - REGULATORY INFORMATION

TOXIC SUBSTANCES CONTROL ACT:

This product contains the following chemical substances subject to the reporting requirements of TSCA 12(B) if exported from the United States:

----- CHEMICAL NAME -----	CAS NUMBER
No information is available.	

NEW JERSEY RIGHT-TO-KNOW:

The following materials are non-hazardous, but are among the top five components in this product:

----- CHEMICAL NAME -----	CAS NUMBER
Alkyd resin	TSRN-618608-5177P

PENNSYLVANIA RIGHT-TO-KNOW:

The following non-hazardous ingredients are present in the product at greater than 3%:

----- CHEMICAL NAME -----	CAS NUMBER
Alkyd resin	proprietary

CALIFORNIA PROPOSITION 65:

WARNING: The chemical(s) noted below and contained in this product, are known to the state of California to cause cancer, birth defects or other reproductive harm:

----- CHEMICAL NAME -----	CAS NUMBER
No Proposition 65 chemicals are known to exist in this product.	

INTERNATIONAL REGULATIONS: AS FOLLOWS -

CANADIAN WHMIS: This MSDS has been prepared in compliance with Controlled Product Regulations except for use of the 16 headings.

CANADIAN WHMIS CLASS: No information available.

SECTION 16 - OTHER INFORMATION

HMIS RATINGS - HEALTH: 2 FLAMMABILITY: 4 REACTIVITY: 1

PREVIOUS MSDS REVISION DATE: 07/21/1995

REASON FOR REVISION:

SECTION 1: Address change and new emergency contact phone numbers.

VOC less water, less exempt solvent: 510-515 gm/l (67%)
VOC material: 510-515 gm/l

(Continued on Page 7)

Product Name: SPRAY 'N GO VOC - ALUMINUM

Revision Date: 12/30/1999

Page

12/01/1997

SECTION 16 - OTHER INFORMATION

LEGEND: ACGIH - AMERICAN CONFERENCE OF GOVERNMENTAL INDUSTRIAL HYGIENISTS
N.A. - NOT APPLICABLE
N.E. - NOT ESTABLISHED
PEL - PERMISSIBLE EXPOSURE LIMIT
NTP - NATIONAL TOXICOLOGY PROGRAM
SARA - SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT OF 1986
STEL - SHORT TERM EXPOSURE LIMIT
TLV - THRESHOLD LIMIT VALUE (8 HR. TIME WEIGHTED AVERAGE OR TWA)
VOC - VOLATILE ORGANIC COMPOUND
NJRTK - NEW JERSEY RIGHT TO KNOW LAW
N.D. - NOT DETERMINED

MSDS# 21018

This data is offered in good faith as typical values and not as a product specification. No warranty either expressed or implied, is hereby made. The recommended industrial hygiene and safe handling procedures are believed to be generally applicable. However, each user should review the recommendations in specific context of the intended use and determine if

M A T E R I A L S A F E T Y D A T A S H E E T

SECTION 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME : Spray & Go VOC - All Colors
 UPC NUMBER : 56103, 56104, 56105, 56106, 56107, 56108, 56109,
 56119, 56120, 56124, 56125, 56126, 56127, 56135,
 56136
 PRODUCT USE/CLASS : Aerosol Paint

 MANUFACTURER: 24 HOUR EMERGENCY:
 DAP INC. TRANSPORTATION: 1-800-535-5053 (352-323-3500)
 2400 BOSTON STREET MEDICAL : 1-800-327-3874 (513-558-5111)
 BALTIMORE, MD 21224

 PREPARE DATE : 04/24/1997 GENERAL INFORMATION:
 REVISION NO. : 4 DAP INC. : 1-888-DAP-TIPS (1-888-327-8477)
 REVISION DATE: 12/29/1999

SECTION 2 - COMPOSITION/INFORMATION ON INGREDIENTS

ITEM	CHEMICAL NAME	CAS NUMBER	WT/WT. % RANGE
01	N-butane	106-97-8	15.0-20.0 %
02	Methyl Propyl Ketone	107-87-9	1.0-5.0 %
03	Methyl isobutyl ketone	108-10-1	1.0-5.0 %
04	Toluene	108-88-3	5.0-15.0 %
05	Xylene	1330-20-7	1.0-5.0 %
06	Titanium dioxide	13463-67-7	3.0-15.0 %
07	Trimethylbenzene	25551-13-7	1.0-5.0 %
08	Petroleum naphtha, heavy alkylate	64741-65-7	1.0-5.0 %
09	Aromatic hydrocarbon	64742-95-6	5.0-10.0 %
10	Propane	74-98-6	15.0-20.0 %
11	Mineral spirits	8052-41-3	1.0-5.0 %
12	Acetone	67-64-1	20.0-25.0 %
13	Methyl Ethyl Ketone	78-93-3	5.0-10.0 %

EXPOSURE LIMITS

ITEM	ACGIH		OSHA		COMPANY	
	TLV-TWA	TLV-STEL	PEL-TWA	PEL-CEILING	TLV-TWA	SKIN
01	800 ppm	N.E.	800 ppm	N.E.	N.E.	NO
02	100 ppm	N.E.	200 ppm	N.E.	N.E.	NO
03	50 ppm	75 ppm	50 ppm	N.E.	N.E.	NO
04	50 ppm	N.E.	100 ppm	N.E.	N.E.	YES
05	100 ppm	150 ppm	N.E.	100 ppm	N.E.	NO
06	10 mg/m3dust	N.E.	10 mg/m3dust	N.E.	5 mg/m3dust	NO
07	25 ppm	N.E.	25 ppm	N.E.	N.E.	NO
08	300 ppm	N.E.	N.E.	N.E.	N.E.	NO
09	400 ppm	N.E.	500 ppm	N.E.	N.E.	NO

 Date 6-8-00 () New (X) Revised

(Continued on Page 2)

☒ Technical ☒ Maintenance
☐ Power Plant ☒ WWTP
☐ Lab ☒ #7 Office
☒ #5/6 Office ☒ #8 Office ☒ Main Gate
☒ Material Prep ☒ Stores ☒ Roll Wrap

Product Name: Spray & Go VOC - All Colors
Revision Date: 12/29/1999

Page 2

SECTION 2 - COMPOSITION/INFORMATION ON INGREDIENTS

ITEM	EXPOSURE LIMITS					SKIN
	ACGIH TLV-TWA	ACGIH TLV-STEL	OSHA PEL-TWA	OSHA PEL-CEILING	COMPANY TLV-TWA	
10	1000 ppm	N.E.	1000 ppm	N.E.	N.E.	NO
11	100 ppm	N.E.	100 ppm	N.E.	N.E.	NO
12	750 ppm	1000 ppm	750 ppm	N.E.	N.E.	NO
13	200 ppm	300 ppm	200 ppm	300 ppm	N.E.	NO

(See Section 16 for abbreviation legend)

Remaining ingredients are not considered hazardous per the OSHA Hazard Communication Standard.

Listed Permissible Exposure Levels (PEL) are from the U.S. Dept. of Labor OSHA Final Rule Limits (CFR 29 1910.1000); limits may vary between states.

SECTION 3 - HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW: DANGER! Extremely flammable liquid and vapor. Vapor harmful. Harmful or fatal if swallowed. Contents under pressure. Harmful if inhaled. Exposure to temperatures above 120 degrees F. may cause can to rupture.

POTENTIAL HEALTH EFFECTS:

EFFECTS OF OVEREXPOSURE - EYE CONTACT: May cause eye irritation.

EFFECTS OF OVEREXPOSURE - SKIN CONTACT: May irritate skin. Prolonged or repeated contact can result in defatting and drying of the skin which may result in skin irritation and dermatitis (rash).

EFFECTS OF OVEREXPOSURE - INHALATION: Vapor harmful if inhaled. Vapor may cause nose and throat irritation. Vapor inhalation may affect the brain or nervous system causing dizziness, headache or nausea. Inhalation of high concentrations of vapor is harmful and may lead to heart irregularities.

EFFECTS OF OVEREXPOSURE - INGESTION: This material may be harmful or fatal if swallowed. Aspiration of material into the lungs due to vomiting can cause chemical pneumonitis which can be fatal. If ingested, this product may cause vomiting, diarrhea, and depressed respiration.

EFFECTS OF OVEREXPOSURE - CHRONIC HAZARDS: Reports have associated permanent brain and nervous system damage with prolonged and repeated occupational overexposure to solvents. Overexposure or misuse of toluene can cause liver, kidney, and brain damage as well as cardiac abnormalities. Symptoms include: loss of memory, loss of intellectual ability, and loss of coordination.

(Continued on Page 3)

Product Name: Spray & Go VOC - All Colors
Revision Date: 12/29/1999

Page 3

SECTION 3 - HAZARDS IDENTIFICATION

MEDICAL CONDITIONS WHICH MAY BE AGGRAVATED BY CONTACT: If dry sanded, asthma and asthma-like conditions may worsen from prolonged or repeated exposure to dust.

PRIMARY ROUTE(S) OF ENTRY: SKIN CONTACT INHALATION

SECTION 4 - FIRST AID MEASURES

EYE CONTACT: Flush with large quantities of water until irritation subsides. Contact a physician.

SKIN CONTACT: Wash with soap and water.

INHALATION: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Contact a physician immediately.

INGESTION: DO NOT INDUCE VOMITING. Contact a physician or Regional Poison Control Center immediately.

COMMENTS: None.

SECTION 5 - FIRE FIGHTING MEASURES

FLASH POINT: Aerosol. Extremely flammable. LOWER EXPLOSIVE LIMIT: N.A.
UPPER EXPLOSIVE LIMIT: N.A.

AUTOIGNITION TEMPERATURE: N.E.

EXTINGUISHING MEDIA: CO2 DRY CHEMICAL FOAM

UNUSUAL FIRE AND EXPLOSION HAZARDS: Containers may explode if exposed to extreme heat. Eliminate sources of ignition: heat, electrical equipment, sparks, and flames. Do not put in contact with oxidizing or caustic materials.

SPECIAL FIREFIGHTING PROCEDURES: Full protective equipment, including self-contained breathing apparatus, is recommended to protect from combustion products. Cool exposed containers with water.

SECTION 6 - ACCIDENTAL RELEASE MEASURES

SPILL OR LEAK PROCEDURES: Use absorbent material or scrape up dried material and place into containers.

(Continued on Page 4)

Product Name: Spray & Go VOC - All Colors
Revision Date: 12/29/1999

Page 4

SECTION 7 - HANDLING AND STORAGE

HANDLING INFORMATION: KEEP OUT OF REACH OF CHILDREN. Avoid skin and eye contact. Avoid breathing vapors. Use only in a well ventilated area. Make sure nozzle arrow is directed away from yourself prior to discharge.

STORAGE INFORMATION: Store away from caustics and oxidizers. Keep away from heat, spark, and flame. Keep containers tightly closed when not in use. Keep containers from excessive heat and freezing. Do not store at temperatures above 120 degrees F.

OTHER PRECAUTIONS: Intentional misuse by deliberately concentrating and inhaling vapors may be harmful or fatal. Do not take internally.

SECTION 8 - EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS: Provide sufficient mechanical ventilation (local or general exhaust) to maintain exposure below PEL and TLV. Vapors are heavier than air and will collect in low areas. Check all low areas (basements, sumps, etc.) for vapors before entering.

RESPIRATORY PROTECTION: If 8 hour exposure limit or value is exceeded for any component, use an approved NIOSH/OSHA respirator. Consult your safety equipment supplier and the OSHA regulation, 29 CFR 1910.134 for respirator requirements. A respiratory protection program that meets OSHA 1910.134 and ANSI Z88.2 requirements must be followed whenever workplace conditions warrant a respirator's use.

EYE PROTECTION: Goggles or safety glasses with side shields.

SKIN PROTECTION: Solvent impervious gloves.

OTHER PROTECTIVE EQUIPMENT: None.

HYGIENIC PRACTICES: Remove contaminated clothing and wash before reuse.

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

BOILING RANGE	: N.A.	VAPOR DENSITY	: Is heavier than air
ODOR	: Gasoline-like		
APPEARANCE	: Various colors	EVAPORATION RATE:	Is faster than Butyl Acetate
SOLUBILITY IN H2O	: Negligible		
SPECIFIC GRAVITY	: 0.70-0.85		
VAPOR PRESSURE	: N.A.		
PHYSICAL STATE	: Liquid		

(See Section 16 for abbreviation legend)

(Continued on Page 5)

Product Name: Spray & Go VOC - All Colors
Revision Date: 12/29/1999

Page 5

SECTION 10 - STABILITY AND REACTIVITY

CONDITIONS TO AVOID: Excessive heat and freezing.

INCOMPATIBILITY: Strong oxidizers and caustics.

HAZARDOUS DECOMPOSITION PRODUCTS: Normal decomposition products, i.e. COx, NOx

HAZARDOUS POLYMERIZATION: Will not occur under normal conditions.

STABILITY: This product is stable under normal storage conditions.

SECTION 11 - TOXICOLOGICAL PROPERTIES

No product or component toxicological information is available.

SECTION 12 - ECOLOGICAL INFORMATION

No Information.

SECTION 13 - DISPOSAL CONSIDERATIONS

WASTE MANAGEMENT/DISPOSAL: Dispose of according to Federal, State, and Local Standards. Use all material before disposal. If unable to use entire contents of can, relieve pressure in container until it equals external pressure. Incineration of this can without first relieving all pressure may result in an explosion and personal injury. Responsibility for proper waste disposal is with the owner of the waste.

EPA WASTE CODE - If discarded (40 CFR 261): D001-Ignitable(if residue remains).

SECTION 14 - TRANSPORTATION INFORMATION

DOT PROPER SHIPPING NAME: Consumer Commodity

DOT HAZARD CLASS: ORM-D

DOT UN/NA NUMBER: NONE

PACKING GROUP: NONE

RESP. GUIDE PAGE: 171

(Continued on Page 6)

Product Name: Spray & Go VOC - All Colors
Revision Date: 12/29/1999

Page 6

SECTION 15 - REGULATORY INFORMATION

U.S. FEDERAL REGULATIONS: AS FOLLOWS -

OSHA: Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200)

SARA SECTION 313:

This product contains the following substances subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372:

CHEMICAL NAME	CAS NUMBER	WT/WT % RANGE
Methyl isobutyl ketone	108-10-1	1.0-5.0 %
Toluene	108-88-3	5.0-15.0 %
Xylene	1330-20-7	1.0-5.0 %
Methyl Ethyl Ketone	78-93-3	5.0-10.0 %

TOXIC SUBSTANCES CONTROL ACT:

This product contains the following chemical substances subject to the reporting requirements of TSCA 12(B) if exported from the United States:

CHEMICAL NAME	CAS NUMBER
No information is available.	

NEW JERSEY RIGHT-TO-KNOW:

The following materials are non-hazardous, but are among the top five components in this product:

CHEMICAL NAME	CAS NUMBER
Alkyd Resin	TSRN-MWT00094

PENNSYLVANIA RIGHT-TO-KNOW:

The following non-hazardous ingredients are present in the product at greater than 3%:

CHEMICAL NAME	CAS NUMBER
Alkyd Resin	proprietary

CALIFORNIA PROPOSITION 65:

WARNING: The chemical(s) noted below and contained in this product, are known to the state of California to cause cancer, birth defects or other reproductive harm:

CHEMICAL NAME	CAS NUMBER
Toluene	108-88-3
Benzene	71-43-2

INTERNATIONAL REGULATIONS: AS FOLLOWS -

(Continued on Page 7)

Product Name: Spray & Go VOC - All Colors
Revision Date: 12/29/1999

Page 7

SECTION 15 - REGULATORY INFORMATION

CANADIAN WHMIS: This MSDS has been prepared in compliance with Controlled Product Regulations except for use of the 16 headings.

CANADIAN WHMIS CLASS: No information available.

SECTION 16 - OTHER INFORMATION

HMIS RATINGS - HEALTH: 2 FLAMMABILITY: 4 REACTIVITY: 1

PREVIOUS MSDS REVISION DATE: 04/24/1997

REASON FOR REVISION:

SECTION 1: Address change and new emergency contact phone numbers.

This product is classified as nonflat coating and contains a maximum of 65% VOC by weight.

LEGEND: ACGIH - AMERICAN CONFERENCE OF GOVERNMENTAL INDUSTRIAL HYGIENISTS
N.A. - NOT APPLICABLE
N.E. - NOT ESTABLISHED
PEL - PERMISSIBLE EXPOSURE LIMIT
NTP - NATIONAL TOXICOLOGY PROGRAM
SARA - SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT OF 1986
STEL - SHORT TERM EXPOSURE LIMIT
TLV - THRESHOLD LIMIT VALUE (8 HR. TIME WEIGHTED AVERAGE OR TWA)
VOC - VOLATILE ORGANIC COMPOUND
NJRTK - NEW JERSEY RIGHT TO KNOW LAW
N.D. - NOT DETERMINED

MSDS# 21015

This data is offered in good faith as typical values and not as a product specification. No warranty either expressed or implied, is hereby made. The recommended industrial hygiene and safe handling procedures are believed to be generally applicable. However, each user should review the recommendations in specific context of the intended use and determine if

Ref: 0718msds.262

**MATERIAL SAFETY DATA
SHEET**

FOX VALLEY SYSTEMS, INC.
640 Industrial Drive
Cary, Illinois, U.S.A. 60013-1948

Prepared: July 17, 1989

EMERGENCY TELEPHONE: Call local poison control center

INFORMATION TELEPHONE: (312) 639-5744
*After November 10, 1989, Area Code is 708

**SECTION I: PRODUCT IDENTIFICATION
& HAZARDOUS INGREDIENTS**

NOTE: Only hazardous ingredients are listed. Shown as a %age of the total weight of the contents of each product.

1. SUPER STRIPE ATHLETIC PAINT: White SS42
SUPER STRIPE TRAFFIC PAINT: White TW13, Gray TG1, Black TB1
SUPER SUPREME TRAFFIC PAINT: White STW1
Acetone 2-10%, Butane 10-15%, 2-Butoxyethanol 1-3%, Propane 10-15%, Toluene 10-20%, VM & P Naphtha 8-15%, Xylene 3-10%. Weight: 10-10.6 lbs./gal. For health hazard data see SECTION IV A, below.
2. SUPER STRIPE TRAFFIC PAINT: Red TRI
Acetone 2-10%, Butane 10-15%, 2-Butoxyethanol 1-3%, Propane 10-15%, Stoddard Solvent 1-5%, Toluene 10-20%, VM & P Naphtha 8-15%, Xylene 3-10%, Molybdate Orange 6-8%. Weight: 10-10.6 lbs./gal. For health hazard data see SECTION IV B, below.
3. SUPER SUPREME TRAFFIC PAINT: Yellow STY1
Acetone 2-10%, Butane 10-15%, 2-Butoxyethanol 1-3%, Propane 10-15%, Toluene 10-20%, VM & P Naphtha 8-15%, Xylene 3-10%, Lead Chromate 17-20%. Weight: 10-10.6 lbs./gal. For health hazard data see SECTION IV B, below.
4. TRIG-A-CAP MARKING PAINT: Red TACAPR1
EASY MARKER MARKING PAINT: Red MPAPR1
Butane 10-15%, 2-Butoxyethanol 2-5%, Propane 10-15%, Toluene 15-30%, VM & P Naphtha 5-12%, Xylene 3-10%, Molybdate Orange 5-7%. Weight: 8.5-9.5 lbs./gal. For health hazard data see SECTION IV B, below.
5. TRIG-A-CAP MARKING PAINT: White TACQ2
EASY MARKER MARKING PAINT: White MPC2
Butane 10-15%, 2-Butoxyethanol 2-5%, Propane 10-15%, Toluene 15-30%, VM & P Naphtha 5-12%, Xylene 3-10%. Weight: 8.5-9.5 lbs./gal. For health hazard data see SECTION IV B, below.
6. TRIG-A-CAP MARKING PAINT: Aluminum TACA1
EASY MARKER MARKING PAINT: Aluminum MPA1
Aluminum 2-8%, Aromatic 100 1-1.5%, Butane 10-15%, Propane 10-15%, Stoddard Solvent 1-5%, Toluene 30-40%, Xylene 15-25%. Weight: 8-9 lbs./gal. For health hazard data see SECTION IV B, below.

7. STRIPE TRAFFIC PAINT: Yellow TY13
Acetone 2-10%, Butane 10-15%, 2-Butoxyethanol 1-3%, Propane 10-15%, Toluene 10-20%, VM & P Naphtha 8-15%, Xylene 3-10%, Lead Chromate 8-11%. Weight: 10-10.6 lbs./gal. For health hazard data see SECTION IV B, below.
8. SUPER STRIPE TRAFFIC PAINT: Blue TL1, Green TN1
Acetone 2-10%, Butane 10-15%, 2-Butoxyethanol 1-3%, Propane 10-15%, Stoddard Solvent 1-10%, Toluene 10-20%, VM & P Naphtha 8-15%, Xylene 3-10%. Weight: 10-10.6 lbs./gal. For health hazard data see SECTION IV A, below.
9. SUPER STRIPE ATHLETIC PAINT: Hot Orange SSAH1
TRIG-A-CAP MARKING PAINT: Hot Orange TACH1, Brilliant Red Cerise TACBR1, Scarlet Red TACSRI, Blazing Red Orange TACBRO1, Nature Green TACNG1, Mauve TACMV1
EASY MARKER MARKING PAINT: Hot Orange MPH1, Brilliant Red Cerise MPBR1, Scarlet Red MPSRI, Blazing Red Orange MPBRO1, Nature Green MPNG1, Mauve MPNV1
Aromatic 100 1-3%, Butane 10-20%, Propane 10-20%, Stoddard Solvent 6-10%, Toluene 10-15%, VM & P Naphtha 20-30%. Weight: 7.2-8 lbs./gal. For health hazard data see SECTION IV A, below.
10. TRIG-A-CAP MARKING PAINT: Blue TACEB1, Green TACPG1
EASY MARKER MARKING PAINT: Blue MPEB1, Green MPAPG1
Butane 10-15%, 2-Butoxyethanol 2-5%, Propane 10-15%, Stoddard Solvent 3-10%, Toluene 15-30%, VM & P Naphtha 5-12%, Xylene 3-10%. Weight: 8.5-9.5 lbs./gal. For health hazard data see SECTION IV B, below.
11. TRIG-A-CAP MARKING PAINT: Brown TACBRIU
EASY MARKER MARKING PAINT: Brown MPBRIU
Butane 15-30%, 2-Butoxyethanol 3-8%, Propane 15-30%, Stoddard Solvent 3-8%, Toluene 15-30%, VM & P Naphtha 5-12%, Xylene 3-10%. Weight: 8.0-9.0 lbs./gal. For health hazard data see SECTION IV B, below.
12. TRIG-A-CAP MARKING CHALKS, FLUORESCENT: Hot Orange CHTH1, Brilliant Red Cerise CHTBRI1, Blazing Red Orange CHTBRO1
EASY MARKER MARKING CHALKS, FLUORESCENT: Hot Orange CHMH1, Brilliant Red Cerise CHMBRI1, Blazing Red Orange CHMBRO1
Acetone 40-60%, Butane 10-20%, Propane 10-20%, VM & P Naphtha 2-8%. Weight: 7.2-7.8 lbs./gal. For health hazard data see SECTION IV A, below.
13. SUPER STRIPE TRAFFIC PAINT, UNLEADED: Yellow TYIU, Orange TOIU, Red TRIU
TRIG-A-CAP MARKING PAINT, UNLEADED: Yellow TACYIU, Orange TACDIU, Red TACRIU
EASY MARKER MARKING PAINT UNLEADED: Yellow MPYIU, Orange MPOIU, Red MPRIU
Acetone 2-8%, Butane 10-20%, 2-Butoxyethanol 2-6%, Propane 10-20%, Toluene 10-20%, VM & P Naphtha 5-12%, Xylene 5-10%. Weight: 9-10 lbs./gal. For health hazard data see SECTION IV B, below.
14. SUPER STRIPE TRAFFIC PAINT: Orange TO1
Acetone 2-10%, Butane 10-15%, 2-Butoxyethanol 1-3%, Propane 10-15%, Toluene 10-20%, VM & P Naphtha 8-15%, Xylene 3-10%, Lead Chromate 1-3%, Molybdate Orange 1-2%. Weight: 10-10.6 lbs./gal. For health hazard data see SECTION IV B, below.
15. TRIG-A-CAP MARKING PAINT: Yellow TACRY1
EASY MARKER MARKING PAINT: Yellow MPY1
Butane 10-15%, 2-Butoxyethanol 2-5%, Propane 10-15%, Toluene 15-30%, VM & P Naphtha 5-12%, Xylene 3-10%, Lead Chromate 11-14%. Weight: 8.5-9.5 lbs./gal. For health hazard data see SECTION IV B, below.

LOCTITE CORPORATION

Date of Preparation: 4/12

MATERIAL SAFETY DATA SHEET

Page 1 of 5

MATERIAL SAFETY DATA SHEET

SECTION 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME : NICKEL ANTI-SIEZE AEROSOL
 IDENTIFICATION NUMBER: 51286

Date 6-8-00 () New (X) Revised

PRODUCT USE/CLASS : Lubricant

(X) Technical (X) Maintenance
 () Power Plant (X) WWTP
 () Lab (X) #7 Office
 (X) #5/6 Office (X) #8 Office (X) Main Gate
 (X) Material Prep (X) Stores (X) Roll Wrap

MANUFACTURER:
 Loctite Corporation
 1001 Trout Brook Crossing
 Rocky Hill, Connecticut 06067

EMERGENCY TELEPHONE: 860-571-5100 24 hrs.
 PREPARER: Safety Health & Regulatory Affairs

PREPARE DATE: 10/15/98

SECTION 2 - COMPOSITION/INFORMATION ON INGREDIENTS

ITEM	CHEMICAL NAME	CAS NUMBER	WT/WT % LESS THAN
01	Graphite	7782-42-5	10.0-30.0
02	Heptane	142-82-5	10.0-30.0
03	n-Hexane	110-54-3	10.0-30.0
04	Isobutane	75-28-5	10.0-30.0
05	Petroleum hydrocarbon	64742-53-6	5.0-10.0
06	Nickel	7440-02-0	10.0-30.0
07	Heavy paraffinic petroleum dist.	64742-65-0	5.0-10.0
08	Propane	74-98-6	10.0-30.0
09	Silicon dioxide (quartz)	14808-60-7	0.1-1.0

EXPOSURE LIMITS

ITEM	TLV-TWA ACGIH	TLV-STEL ACGIH	PEL-TWA OSHA	PEL-CEILING OSHA	COMPANY TLV-TWA	SKIN
01	2.0 mg/m3	N.E.	2.5 mg/m3	N/E	N.E.	NO
02	400 ppm	500 ppm	400 ppm	N/E	500 ppm	NO
03	50 ppm	N.E.	50 ppm	N/E	50 ppm	NO
04	N.E.	N.E.	N.E.	N/E	600 ppm	NO
05	5 mg/m3	N.E.	5 mg/m3	N/E	N.E.	NO
06	.1mg/m3	N.E.	.1mg/m3	N/E	N.E.	NO
07	5mg/m3	N.E.	5mg/m3	N/E	N.E.	NO
08	Asphyxiant	N.E.	1000 ppm	N/E	1000 ppm	NO
09	0.1 mg/m3	N.E.	0.1 mg/m3	N/E	0.1 mg/m3	NO

(See Section 16 for abbreviation legend)

SECTION 3 - HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW: Harmful if inhaled or swallowed. High vapor concentrations may cause drowsiness. Extremely flammable liquid and vapor. Contents under pressure. May cause skin irritation. May cause eye irritation.

ACUTE EFFECTS - EYE CONTACT: Mildly irritating to the eyes. Mechanical irritant. Contact may cause tearing and redness.

ACUTE EFFECTS - SKIN CONTACT: Repeated or prolonged contact may cause sensitization. Mild irritant. Prolonged contact may cause defatting and redness.

ACUTE EFFECTS - INHALATION: Vapors may have a strong offensive odor which

LOCTITE CORPORATION

Date of Preparation: 4/12

MATERIAL SAFETY DATA SHEET

Page 3 of 5

Item No.: 51286

UNUSUAL FIRE AND EXPLOSION HAZARDS: Finely divided dust in air may present explosion hazard. Prevent dust buildup. Closed containers may rupture or explode (due to pressure build-up) when exposed to extreme heat. Vapors are heavier than air, and may travel along the ground to be reignited at locations distant from the source; flashback of flame may occur. "Empty" containers may retain dangerous product residues or explosive vapors. DO NOT pressurize, cut, weld, braze, solder, drill or grind on or near empty containers. Store full and empty containers away from heat, sparks, flame, and other sources of ignition. Observe all labeled precautions until containers are cleaned and/or reconditioned. Irritating and/or toxic gases or fumes may be generated by thermal decomposition or combustion.

SPECIAL FIREFIGHTING PROCEDURES: Halogenated extinguishing agents (such as Halon) should not be used. To control the spread of fire, do not use water; ring small fires with dry sand, using non-sparking shovels; avoid creating dust clouds, eliminate drafts, let fire extinguish itself. Use NIOSH-approved self-contained breathing apparatus and full protective clothing. Use water to cool exposed containers. Water stream directed into fire may cause frothing with subsequent spread of flame.

=====

SECTION 6 - ACCIDENTAL RELEASE MEASURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED: Reclaim clean material. Wear appropriate protective equipment during cleanup. Absorb

=====

SECTION 6 - ACCIDENTAL RELEASE MEASURES

with inert material, such as clay. Sweep or shovel into loosely-covered waste container and remove to appropriate waste area. Dispose of in accordance with federal, state, and local regulations. Dispose of damaged aerosol container in accordance with state and local regulations regarding "empty" chemical containers.

=====

SECTION 7 - HANDLING AND STORAGE

HANDLING: Use with adequate ventilation. Follow all MSDS/label precautions even after container is emptied because it may retain product residues. Avoid contact with skin and eyes. FOR INDUSTRIAL USE ONLY.

STORAGE: Keep away from heat, sparks and flame. Do not store in direct sunlight. KEEP OUT OF THE REACH OF CHILDREN.

=====

SECTION 8 - EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS: Local exhaust as needed to control vapor or dust levels to below lowest component TLV.

RESPIRATORY PROTECTION: If TLV/PEL is exceeded, if use is performed in a poorly-ventilated space, or if inhalation effects occur, use NIOSH-approved vapor cartridge respirator in accordance with applicable health and safety regulations and manufacturer's recommendations. Use NIOSH-approved dust/mist respirator when grinding or machining cured compound.

SKIN PROTECTION: Clean clothing to cover skin. Impermeable gloves.

EYE PROTECTION: Safety glasses.

OTHER PROTECTIVE EQUIPMENT: Accessible eye wash and safety shower.

HYGIENIC PRACTICES: Follow good general industrial safety practices during use. Do not smoke or eat during use. Follow all MSDS/label precautions even after container is emptied.

LOCTITE CORPORATION

Date of Preparation: 4/12

MATERIAL SAFETY DATA SHEET

Page 5 of 5

Item No.: 51286

=====

SECTION 15 - REGULATORY INFORMATION

=====

OSHA: Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200)

CERCLA - SARA HAZARD CATEGORY:

This product has been reviewed and is considered, under applicable definitions, to meet the following categories:

FIRE HAZARD IMMEDIATE HEALTH HAZARD CHRONIC HEALTH HAZARD

=====

SARA SECTION 313:

This product contains the following substances subject to the reporting requirements of Section 313 40 CFR Part 3772:

CHEMICAL NAME	CAS NUMBER	WT/WT % IS LESS THAN
n-Hexane	110-54-3	10.0-30.0
Nickel	7440-02-0	10.0-30.0

NEW JERSEY RIGHT-TO-KNOW:

The following materials are non-hazardous, but are among the top five components in this product:

CHEMICAL NAME	CAS NUMBER
---------------	------------

No non-hazardous materials are among the top five ingredients.

PENNSYLVANIA RIGHT-TO-KNOW:

The following non-hazardous ingredients are present in the product at greater than 3%:

CHEMICAL NAME	CAS NUMBER
Calcium sulfonate	71486-79-8
Hydrotreated heavy paraffinic dist	64742-54-7
Calcium Stearate	1592-23-0

CALIFORNIA PROPOSITION 65:

WARNING: This product contains a chemical(s) known to the State of California to cause cancer.

CANADIAN WHMIS: This MSDS has been prepared in compliance with Controlled Product Regulations except for use of the 16 headings.

CANADIAN WHMIS CLASS: D2B, A, B1

COMPONENT RCRA CLASSIFICATIONS: Ignitable.

COMPONENT RCRA CODES: D001

CERCLA RQ VALUE (MINIMUM): 100

=====

SECTION 16 - OTHER INFORMATION

=====

HMIS RATINGS - HEALTH: 2 FLAMMABILITY: 4 REACTIVITY: 0

PREVIOUS MSDS REVISION DATE: 11/04/96

REASON FOR REVISION: update ingredients/shipping info

VOLATILE ORGANIC COMPOUNDS (VOCs): 408 grams/ltr

LEGEND: N.A. - Not Applicable, N.E. - Not Established,

N.D. - Not Determined

ABBREVIATIONS: ACGIH = American Conference of Governmental Industrial Hygienists; OSHA = US Occupational Health and Safety Administration; UK = United Kingdom; TLV-TWA = Threshold Limit Value-Time Weighted Average (8 hrs); STEL = Short-Term Exposure Limit (15 min); C = Ceiling Value; PEL = Permissible Exposure Limit

=====

DATE: 1-15-96 (X) NEW () REVISED

5-94

(X) TECHNICAL () POWER PLANT
 (X) WWTW (X) STORES
 () LAB (X) #5/6 OFFICE
 (X) ROLL WRAP (X) #7 OFFICE
 (X) MAINTENANCE (X) #8 OFFICE
 (X) MATERIAL PREP

32/03

41002

JAN 11 '96 10:33 FR PETRO CANADA S
 01/10/96 WED 16:31 FAX 810 364 4712

Material Safety Data Sheet

May be used to comply with
 OSHA's Hazard Communication Standard,
 29 CFR 1910.1200. Standard must be
 consulted for specific requirements.

U.S. Department of Labor

Occupational Safety and Health Administration
(Non-Mandatory Form)

Form Approved

OMB No. 1218-0072



IDENTITY (As Used on Label and List)

PROPANE (a liquidified petroleum gas)

Note: Blank spaces are not permitted. If any item is not applicable, or no information is available, the space must be marked to indicate that.

Section I

Manufacturer's Name

St. Clair Underground Storage

Emergency Telephone Number

810-364-8100

Address (Number, Street, City, State, and ZIP Code)

Telephone Number for Information

810-364-81002510 Busha Highway

Date Prepared

May 18, 1994Marysville, MI 48040

Signature of Preparer (optional)

Section II — Hazardous Ingredients/Identity Information

Hazardous Components (Specific Chemical Identity; Common Name(s))	OSHA PEL	ACGIH TLV	Other Limits Recommended	% (optional)
CAS#				
Propane	74986	1000 ppm	95% (liq vol)	
Ethane	74840	none (a simple asphyxiant)	3%	
Isobutane	75285	none listed	1%	
Propylene	115071	1000 ppm	1%	

Composition listed is approximate, but typical.

Ethanethiol (Ethyl Mercaptan) CAS# 75081 is added at concentrations of at least 1.5 lbs per
10,000 gallons as the use of the propane requires.

Section III — Physical/Chemical Characteristics

Boiling Point	<u>-50°</u>	Specific Gravity (H ₂ O = 1) Compressed to Liquid	<u>0.503</u>
Vapor Pressure (mm Hg.) <u>psig @ 100° F</u>	<u>190-208</u>	Melting Point	<u>-306° F</u>
Vapor Density (AIR = 1)	<u>1.5</u>	Evaporation Rate (Butyl Acetate = 1) A gas at normal temp. and pressure.	

Solubility in Water

6.5 cc per 100 gms water at 64° F

Appearance and Color

Colorless gas; colorless, clear in liquid state; no significant odor unless
specifically odorized to give typical "gas leak" odor.

Section IV — Fire and Explosion Hazard Data

Flash Point (Method Used)	<u>-156° F</u>	Flammable Limits Vol % in air	LEL <u>2.1%</u>	UEL <u>9.5%</u>
---------------------------	----------------	----------------------------------	--------------------	--------------------

Extinguishing Media

Small fires: dry chemical or CO₂. Large fires: water spray fog or foam.

Special Fire Fighting Procedures

Let tank car, tank truck or storage tank burn unless leak can be stopped. With smaller tank
or cylinders, extinguish/isolate from other flammables. When burning there is a danger of
violent explosion as liquid in tank nears dryness.

Unusual Fire and Explosion Hazards

Extremely flammable; may be ignited by heat, sparks or flames.
Vapors may travel to source of ignition and flash back. Container may explode in heat
of fire. Vapor explosion hazard indoors, outdoors or in sewers.

(Reproduce locally)

OSHA 1218-0072 (2-93)

Propane

Section V — Reactivity Data

Stability	Unstable	Conditions to Avoid
	Stable	Heat, sparks or flames. Extremely flammable.
	X	

Incompatibility (Materials to Avoid)

Flame, ClO₂, oxidizing materials

Hazardous Decomposition or Byproducts

N/A

Hazardous Polymerization	May Occur	Conditions to Avoid
	Will Not Occur	N/A
	X	

Section VI — Health Hazard Data

Route(s) of Entry:	Inhalation?	Skin?	Ingestion?
Primarily inhalation of vapors.			
Health Hazards (Acute and Chronic)	Vapors may cause dizziness or suffocation. Contact with evaporating liquid will cause severe frostbite. Fire may produce irritating or poisonous gases.		

Carcinogenicity:	NTP?	IARC Monographs?	OSHA Regulated?
None			

High concentrations have a central nervous system effect.

Signs and Symptoms of Exposure

Drowsiness, dizziness; an asphyxiant.

Medical Conditions

Generally Aggravated by Exposure

N/A

Emergency and First Aid Procedures Move victim to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call emergency medical care.

Keep victim quiet and maintain normal body temperature.

Section VII — Precautions for Safe Handling and Use

Steps to Be Taken in Case Material Is Released or Spilled

Shut off ignition sources: no flares, smoking or flames in hazard area. Do not touch spilled material. Stop leak if you can do it without risk. Isolate area and deny entry until gas has dispersed; if tank car or truck is involved, isolate 1/2-mile radius.

Waste Disposal Method

For very small amounts: controlled venting in outside air. For large amount: controlled burning in governmental air-pollution-control agency permitted facilities.

Precautions to Be Taken in Handling and Storing

Observe specific handling and safety precautions. Store away from sources of heat, sparks and flame. Store in extremely well-ventilated area or outdoors.

Other Precautions

Ventilate closed area which may contain vapors before entering them. Be aware that vapors may collect in low areas. On occasions odorized propane gas may lose its distinctive odor.

Section VIII — Control Measures

Respiratory Protection (Specify Type)

If exposure is necessary during emergency wear self-contained breathing apparatus.

Ventilation	Local Exhaust	Special
	Explosion-proof fans	N/A
	Mechanical (General)	Other
	N/A	N/A

Protective Gloves Wear gloves to protect hands from valve leaks which can cause frostbite.

Eye Protection Safety glasses or goggles.

Other Protective Clothing or Equipment

N/A

Work Hygienic Practices

Avoid routine inhalation exposure.

MATERIAL SAFETY DATA SHEET

PRODUCT NAME: CB-38 INSECTICIDE 10, 16, 23 & 30 oz.

DATA SHEET # 343366C8

EPA REG. # 9444-021

SECTION I

MANUFACTURED BY: WATERBURY COMPANIES INC.
COMMERCIAL PRODUCTS DIVISION
P.O. BOX 640
INDEPENDENCE, LA 70443

24 HOUR EMERGENCY CONTACT (CHEMTREC):
(800) 424-9300

PRODUCT & SALES INFORMATION: (203) 597-1812
MSDS INFORMATION: (504) 878-6751

DATE REVISED: 03/12/93 DATE PRINTED: 03/17/93

PREPARED BY: J.C.A.

HAZARD RATING: (Assumes the highest NFPA 704 rating for individual components within each hazard category)

HAZARD RATING SCALE:

HEALTH: - 3 - FIRE: - 4 - REACTIVITY: - 1 - SPECIAL: - NONE -

0 - MINIMAL 1 - SLIGHT
2 - MODERATE 3 - SERIOUS 4 - SEVERE

SHIPPING INFORMATION:

SHIPPING DESCRIPTION: INSECTICIDES, AGRICULTURAL, N.O.I. NMFC 102120

CONTAINER LABELING: CONSUMER COMMODITY DRH-D

TRUCK PLACARDING: No placarding required.

SPECIAL REQUIREMENTS: No special requirements.

SECTION II -- HAZARDOUS INGREDIENTS/IDENTITY INFORMATION

Hazardous components greater than 1.0% (0.1% for carcinogens or suspected carcinogens).

HAZARDOUS COMPONENTS	CAS #	OSHA PEL	ACGIH TLV	OTHER LIMITS	% BY WT.
*Pyrethrins	8003-34-7	5mg/m3	5mg/m3 TWA	5mg/m3 OSHA TWA	0.300
Piperonyl Butoxide	51-03-6	N.E.	N.E.	N/A	2.500
1,1,1 Trichloroethane	71-55-6	350ppm	350ppm	450ppm STEL	55-65
Dimethoxy Methane	109-87-5	1000ppm	1000ppm	N.E.	< 5
*sec-Butanol	78-92-2	100ppm	100ppm	150ppm STEL	< 5
Isoparaffinic Petroleum Distillate	64742-47-8	N.E.	N.E.	300ppm (Exxon)	5-15
Propane	74-98-6	1000ppm	N.E.	1000ppm OSHA TWA	15-25

* This item is NOT considered a carcinogen, and is listed only to aid in the identification of all active ingredients in the product. Actual percentages are listed vs. ranges for all active ingredients.

* Depending on the source for 1,1,1 Trichloroethane, this product may contain this substance.

SECTION III - SECTION 313 SUPPLIER NOTIFICATION

This product contains the following toxic chemicals subject to the reporting requirements of Section 313 of the Emergency Planning and Community Right-to-Know Act of 1986 and 40 CFR 372.

CAS # 71-55-6 1,1,1 Trichloroethane

PERCENT BY WEIGHT: 62

CAS # 109-87-5 Dimethoxy Methane

PERCENT BY WEIGHT: 2

CAS # 78-92-2 *sec-Butanol

PERCENT BY WEIGHT: 1

This information must be included in all MSDS's that are copied and distributed for this material.

SECTION IV - PHYSICAL/CHEMICAL CHARACTERISTICS

BOILING POINT: N/A

SPECIFIC GRAVITY (H2O = 1): 1.21

VAPOR PRESSURE (mm Hg): 3.621

MELTING POINT: N/A

VAPOR DENSITY (AIR = 1): N/A

EVAPORATION RATE (BUTYL ACETATE = 1): N/A

SOLUBILITY IN WATER: Insoluble

APPEARANCE AND ODOR: Very dry fog with characteristic Pyrethrin odor.

SECTION V - FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (METHOD USED): Non Flammable per flame extension test.

FLAMMABLE LIMITS: N/A

LEL: N/A UEL: N/A

EXTINGUISHING MEDIA: CO2, Dry Chemical, Foam

SPECIAL FIRE-FIGHTING PROCEDURES: Self contained air supply suggested. Keep containers cool to avoid bursting.

UNUSUAL FIRE AND EXPLOSION HAZARDS: Exposure to temperatures above 130 deg.F may cause bursting.

SECTION VI - REACTIVITY DATA

STABILITY: UNSTABLE: --- STABLE: -YES-

CONDITIONS TO AVOID: Open flames and very hot surfaces can cause thermal decomposition.

INCOMPATIBILITY (MATERIALS TO AVOID): Strong alkalines, acids, oxidizers, aluminum and other reactive metals.

HAZARDOUS DECOMPOSITION OR BY-PRODUCTS: Hydrogen chloride, small amounts of phosgene and chlorine, carbon dioxide, and carbon monoxide.

HAZARDOUS POLYMERIZATION: MAY OCCUR: --- WILL NOT OCCUR: -X-

CONDITIONS TO AVOID: None known.

SECTION VII - HEALTH HAZARD

ROUTE(S) OF ENTRY: INHALATION? -YES- SKIN? -YES- INGESTION? -YES-

HEALTH HAZARDS (ACUTE AND CHRONIC): Laboratory studies have shown that petroleum distillates, similar to the one in this product, can produce kidney effects in male rats. The significance of these effects are unlikely, due to a number of human studies, which produced no evidence of such effects at normal occupational levels. Also, chronic overexposures to 1,1,1 Trichloroethane have caused liver toxic effects in experimental animals.

CARCINOGENICITY: NPT? -NO- IARC MONOGRAPHS? -NO- OSHA REGULATED? -NO-

SIGNS AND SYMPTOMS OF EXPOSURE: Dermatitis, skin disorders, nausea, throat irritation, headaches, dizziness.

N/A - NOT APPLICABLE N.E. - NOT ESTABLISHED

PAGE 1 OF 2

DATE: 10-27-94

DISTRIBUTION

(X) TECHNICAL	(X) POWER PLANT
(X) WWTP	(X) STORES
(X) ROLL WRAP	(X) #5/6 OFFICE
(X) MAINTENANCE	(X) #7 OFFICE
(X) MATERIAL PREP	(X) #8 OFFICE

ness, and other nervous system effects.
AL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE: Acute and chronic liver disease and rhythm disorders of the
rt. Skin contact may aggravate an existing dermatitis.
ENCY AND FIRST AID PROCEDURES: IF SWALLOWED: Call a physician or Poison Control Center immediately.
tric lavage is indicated if material was taken internally. Do not induce vomiting. Vomiting may cause
irritation pneumonia hazard. IF INHALED: Remove victim to fresh air. Apply artificial respiration if
icated. IF ON SKIN OR CLOTHING: Remove contaminated clothing & wash before reuse. Wash affected areas
h soap & water. Get medical attention if irritation persists. IF IN EYES: Flush with plenty of water. Get
ical attention if irritation persists.
VIII - PRECAUTIONS FOR SAFE HANDLING AND USE-----
TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED: If container is ruptured or begins to leak, place in
ell-ventilated area free of sparks and ignition sources. Pesticide that cannot be used according to label
structions must be disposed of according to all applicable local, State and Federal procedures.
DISPOSAL METHOD: Do not reuse empty container. Replace cap, wrap empty container in newspaper and discard
trash. Do not puncture or incinerate. Any remaining or collected liquid from punctured cans should be
posed of in a safe manner at an approved facility in accordance with local, State and Federal regulations.
UTIONS TO BE TAKEN IN HANDLING AND STORING: Read label. Do not apply directly to food. In commercial food
dling facilities, cover or remove any food and food processing equipment during application. Do not apply
ile food processing is under way. After space spraying food processing plants, thoroughly wash all equipment,
ches, shelving, etc. where exposed food will be handled and rinse with potable water. In the home, all food
cessing surfaces and utensils should be covered during treatment or thoroughly washed before use.
PRECAUTIONS: It is a violation of federal law to use this product in a manner inconsistent with its
elling. Read label. Store in a cool dry area away from heat or open flames. Exposure to temperatures above
0 deg.F may cause bursting. Do not spray on plastic painted, or varnished surfaces or directly into
lectronic equipment such as radios, TV's, computers, etc.
product is authorized for use in plants operating under USDA Inspection and Grading Programs as a CATEGORY
substance.
OL STORAGE CLASSIFICATION: Store as a level 1 aerosol (per NFPA 308).
IX - CONTROL MEASURES-----
RATORY PROTECTION (SPECIFY TYPE): Required during volumetric treatments.
ILATION:
AL EXHAUST: As required to keep airborne concentrations below the acceptable levels.
HANICAL (GENERAL): Provide adequate ventilation in treatment area.
ICIAL: N/A
ER: N/A
ECTIVE GLOVES: Not required-avoid contact with skin.
ROTECTION: Not required-avoid contact with eyes.
PROTECTIVE CLOTHING OR EQUIPMENT: During volumetric treatment, wear respirator jointly approved by the
SA & NIOSH under provisions of 30 CFR Part 11. Safety glasses with glass lenses recommended.
HYGIENIC PRACTICES: Follow label instructions.
X - TITLE III SECTION 312 TIER TWO INVENTORY REPORT INFORMATION-----
Completing Title III Section 312 Tier Two Inventory Reports, the following information should be used. See
regulations for additional and complete reporting requirements for the specific site.
N/A - There is no CAS# for this mixture.
product should be described as: PURE MIXTURE X SOLID LIQUID X GAS X
ICAL & HEALTH HAZARDS: FIRE X SUDDEN RELEASE OF PRESSURE X REACTIVITY X IMMEDIATE X DELAYED
XI - SUMMARY OF CHANGES-----
ed format of MSDS and information in Sections VI, VII, & VIII.
ormation is supplied in good faith, but no warranty expressed or implied is made. Waterbury Companies
es that it is accurate to the best of its knowledge & relates only to the specific material designated herein
NOT APPLICABLE N.E. - NOT ESTABLISHED

SPARTAN CHEMICAL COMPANY, INC.
MATERIAL SAFETY DATA SHEET

Date: 10-2-96 (X) New () Revised

SECTION I: PRODUCT INFORMATION

(X) Technical () WWTP
(X) Power Plant () #7 Office
() Lab () #8 Office
() #5/6 Office () Stores
() Material Prep () Roll Wrap
() Maintenance

PRODUCT NAME OR NUMBER (as it appears on label)

CR-2 CRAWLING INSECT KILLER (AEROSOL)

MANUFACTURER'S NAME

Spartan Chemical Company, Inc.

EMERGENCY TELEPHONE NO.

800/537-8990

ADDRESS (NUMBER, STREET, CITY, STATE AND ZIP CODE)

110 N. Westwood Ave., Toledo, OH 43607

NFPA RATINGS:	HMIS RATINGS:
HEALTH-1 FIRE-0 REACT-1	HEALTH-1 FIRE-0 REACT-1 PERS. PROT.-B

SECTION II: HAZARDOUS INGREDIENTS

CAS REGISTRY NO.	%W	CHEMICAL NAME(S)	TABLE Z-1-A			CARCINOGEN
			TWA mg/m ³	STEL mg/m ³	CEILING mg/m ³	
8032-32-4	4	Odorless mineral spirits	1350	1800	—	No
*111-76-2	6	Butoxyethanol	120	—	—	No
75-28-5	2	Isobutane	—	—	—	No
74-98-6	3	Propane	1800	—	—	No

*This substance is subject to the reporting requirements of Section 313 of the Emergency Planning and Community Right-to-Know Act of 1986 (SARA) and of 40 CFR 372.

SECTION III: PHYSICAL DATA

BOILING POINT

N/A

SPECIFIC GRAVITY (H₂O = 1)

0.95

PERCENT SOLID BY WEIGHT

3

VAPOR PRESSURE

100mm Hg @ 130°F

EVAPORATION RATE (but. ace. = 1)

<1

VAPOR DENSITY (AIR = 1)

>1

SOLUBILITY IN WATER

Forms an emulsion

APPEARANCE AND ODOR

Clear liquid, solvent odor

IS MATERIAL: (LIQUID) SOLID

GAS

PASTE

POWDER

pH

7.2-8.0

SECTION IV: FIRE & EXPLOSION HAZARD DATA

FLAME EXTENSION - N/A

METHOD USED - ASTM - D3065

FLAMMABLE LIMITS - N/A

EXTINGUISHING MEDIA - Water fog

PL FIRE FIGHTING PROCEDURES - Keep container cool, use equipment or shielding to protect personnel from bursting, rupturing or venting containers.

UNUSUAL FIRE AND EXPLOSION HAZARDS - At elevated temperatures (over 54°C/130°F) containers may vent, rupture or burst.

SECTION V: HEALTH HAZARD DATA

EFFECTS OF OVEREXPOSURE - CONDITIONS TO AVOID

Butoxyethanol is absorbed through the skin which may affect the liver, kidneys, lymph and blood systems. Inhalation may affect central nervous system and cause respiratory irritation.

THRESHOLD LIMIT VALUE - Not established

PRIMARY ROUTES OF ENTRY INHALATION ☒ SKIN CONTACT ☒ OTHER (SPECIFY) ____

CONDITIONS AGGRAVATED BY USE - Unknown

EMERGENCY AND FIRST AID PROCEDURES - EYES: In case of contact, immediately flush eyes with water for at least 15 minutes. Remove contact lenses. **SKIN:** In case of skin contact, remove contaminated clothing and immediately wash skin with plenty of water. **INGESTION:** If swallowed, call a physician or Poison Control Center. Drink 1 or 2 glasses of water and induce vomiting by touching back of throat with finger. Do not induce vomiting or give anything by mouth to an unconscious person. **INHALATION:** If inhaled, remove person to fresh air and call a physician. **NOTE TO PHYSICIAN:** Chlorpyrifos is a cholinesterase inhibitor. Treat symptomatically. Atropine only by injection is an antidote.

SECTION VI: REACTIVITY DATA

STABILITY: STABLE ☒

INCOMPATIBILITY (MATERIALS TO AVOID) - None

HAZARDOUS DECOMPOSITION PRODUCTS - None known

HAZARDOUS POLYMERIZATION: WILL NOT OCCUR ☒

SECTION VII: SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED - Avoid breathing vapors, remove ignition sources, pick up with scoop or absorbent material.

WASTE DISPOSAL METHOD - Do not incinerate or puncture aerosol container. Dispose of in accordance with state, local or Federal regulations.

SECTION VIII: SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION (SPECIFY TYPE) - None required

VENTILATION - Good general ventilation should be sufficient for most conditions. Local exhaust ventilation may be necessary for some operations.

PROTECTIVE GLOVES (SPECIFY TYPE)

Rubber gloves

EYE PROTECTION (SPECIFY TYPE)

Goggles

OTHER PROTECTIVE EQUIPMENT - Not necessary

SECTION IX: SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING - Contents under pressure. Do not use near fire, sparks or flame. Do not store where temperatures could exceed 130°F.

OTHER PRECAUTIONS - None

Spartan Chemical Company, Inc.
CR-2 CRAWLING INSECT KILLER (AEROSOL)
Ref. 29 CFR 1910:1200 (OSHA)

NAME	Thomas J. Mitchell
TITLE	Director of Research
DATE	July 18, 1996
SUPERCEDES	September 20, 1994

SPARTAN CHEMICAL CO., INC.
MATERIAL SAFETY DATA SHEET

SECTION I: PRODUCT INFORMATION

PRODUCT NAME OR NUMBER (as it appears on label)

STERIPHENE II BRAND DISINFECTANT DEODERANT

(Clean Fresh and Spring Breeze Fragrance)

MANUFACTURER'S NAME

Spartan Chemical Co., Inc.

EMERGENCY TELEPHONE NO.

419/531-5551

ADDRESS (NUMBER, STREET, CITY, STATE AND ZIP CODE)

110 N. Westwood Ave., Toledo, OH 43607

MANUFACTURER'S D-U-N-S NO.

00-503-6728

NFPA RATINGS:	HMIS RATINGS:
HEALTH-0 FIRE-2 REACT-0	HEALTH-1 FIRE-4 REACT-0 PERS. PROT.-A

SECTION II: HAZARDOUS INGREDIENTS

CAS REGISTRY NO.	%W	CHEMICAL NAME(S)	TABLE Z-1-A			CARCINOGEN
			TWA mg/M ³	STEL mg/M ³	CEILING mg/M ³	
64-17-5	64.00	Ethyl alcohol	1900	1900	n/a	No
74-98-6	8-12	Propane	1800	1800	n/a	No
75-28-5	8-12	Isobutane	--- not established ---			No

SECTION III: PHYSICAL DATA

BOILING POINT

165-175°F

VAPOR PRESSURE

35 mm Hg @ 20°C

VAPOR DENSITY (AIR = 1)

Unknown

SOLUBILITY IN WATER

Complete

pH

8.0-9.0

SPECIFIC GRAVITY (H₂O = 1)

0.84 (concentrate)

EVAPORATION RATE (but. ace. = 1)

1.5 (concentrate)

APPEARANCE AND ODOR

Light yellow liquid,
citrus, floral fragrance

PERCENT SOLID BY WEIGHT

trace

IS MATERIAL: (LIQUID) SOLID

GAS PASTE POWDER

SECTION IV: FIRE & EXPLOSION HAZARD DATA

FLAME EXTENSION - 20"

METHOD USED - ASTM - D92

FLAMMABLE LIMITS - n/a

EXTINGUISHING MEDIA

Foam or CO₂

FIRE FIGHTING PROCEDURES - Use equipment or shielding required to protect personnel against bursting, or venting containers.

UNUSUAL FIRE AND EXPLOSION HAZARDS - At elevated temperatures (54°C/130°F) containers may vent, rupture or burst.

SECTION V: HEALTH HAZARD DATA

EFFECTS OF OVEREXPOSURE – CONDITIONS TO AVOID **THRESHOLD LIMIT VALUE** – Not established
Causes eye and skin irritation. Do not spray in eyes or on skin. Do not spray on food or food utensils.
Avoid inhalation.

CONDITIONS AGGRAVATED BY USE – Unknown

PRIMARY ROUTES OF ENTRY INHALATION ☒ SKIN CONTACT ☒ OTHER (SPECIFY)

EMERGENCY AND FIRST AID PROCEDURES

In case of contact, immediately flush eyes or skin with plenty of water for at least 15 minutes.
If irritated, call a physician. In case of prolonged skin contact, wash with soap and water.

SECTION VI: REACTIVITY DATA

STABILITY: UNSTABLE ☐
 STABLE ☒

INCOMPATIBILITY (MATERIALS TO AVOID) – None known

HAZARDOUS DECOMPOSITION PRODUCTS – CO₂, CO

HAZARDOUS MAY OCCUR ☐
POLYMERIZATION: WILL NOT OCCUR ☒

SECTION VII: SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED

Flush with water through sanitary sewer system.

WASTE DISPOSAL METHOD

Do not incinerate or puncture aerosol container. Dispose of in accordance with state or local regulations.

SECTION VIII: SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION (SPECIFY TYPE)

None required

VENTILATION – Good general ventilation should be sufficient for most conditions. Local exhaust ventilation may be necessary for some operations.

PROTECTIVE GLOVES (SPECIFY TYPE)

None required

EYE PROTECTION (SPECIFY TYPE)

None required

OTHER PROTECTIVE EQUIPMENT

None

SECTION IX: SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING – Flammable! Contents under pressure. Do not use near fires, sparks or flame. Do not store where temperatures could exceed 120°F.

OTHER PRECAUTIONS – None

partan Chemical Co., Inc.
TERIPHENE II BRAND DISINFECTANT DEODORANT
ef: 29 CFR 1910:1200 (OSHA)

NAME
TITLE
DATE
SUPERCEDES

Thomas J. Mitchell
Director of Research
December 10, 1992
June 1, 1990

SPARTAN CHEMICAL CO., INC.
MATERIAL SAFETY DATA SHEET

SECTION I: PRODUCT INFORMATION

PRODUCT NAME OR NUMBER (as it appears on label)

PREMIUM WOOD POLISH (AEROSOL)

MANUFACTURER'S NAME

Spartan Chemical Co., Inc.

EMERGENCY TELEPHONE NO.

419/531-5551

ADDRESS (NUMBER, STREET, CITY, STATE AND ZIP CODE)

110 N. Westwood Ave., Toledo, OH 43607

MANUFACTURER'S D-U-N-S NO.

00-503-6728

NFPA RATINGS:	HMIS RATINGS:
HEALTH-1 FIRE-0 REACT-1	HEALTH-2 FIRE-2 REACT-1 PERS. PROT.-A

SECTION II: HAZARDOUS INGREDIENTS

CAS REGISTRY NO.	%W	CHEMICAL NAME(S)	TABLE Z-1-A			CARCINOGEN
			TWA mg/M ³	STEL mg/M ³	CEILING mg/M ³	
8032-32-4	5-10	Odorless mineral spirits	1350	1800	---	No
75-28-5	5-10	Isobutane	---	not established	---	No
74-98-6	5-10	Propane	---	1800	---	No

SECTION III: PHYSICAL DATA

BOILING POINT

n/a

SPECIFIC GRAVITY (H₂O = 1)

0.93

PERCENT SOLID BY WEIGHT

23-26

VAPOR PRESSURE

n/a

EVAPORATION RATE (but. ace. = 1)

<1

VAPOR DENSITY (AIR = 1)

Unknown

SOLUBILITY IN WATER

Forms an emulsion

APPEARANCE AND ODOR

Off-white, opaque emulsion,
lemon fragrance

IS MATERIAL: (LIQUID) SOLID
GAS PASTE POWDER

pH

7.4

SECTION IV: FIRE & EXPLOSION HAZARD DATA

FLASH POINT - None

METHOD USED - ASTM - D92

FLAMMABLE LIMITS - n/a

EXTINGUISHING MEDIA

Water, carbon dioxide, chemical or dry foam

SPECIAL FIRE FIGHTING PROCEDURES

Use equipment or shielding required to protect personnel against bursting, rupturing or venting containers.

UNUSUAL FIRE AND EXPLOSION HAZARDS

At elevated temperatures (54°C/130°F) containers may vent, rupture or burst.

SECTION V: HEALTH HAZARD DATA

EFFECTS OF OVEREXPOSURE - CONDITIONS TO AVOID - THRESHOLD LIMIT VALUE - Not established
May cause eye irritation.

PRIMARY ROUTES OF ENTRY INHALATION ☐ SKIN CONTACT ☒ OTHER (SPECIFY) ☐

CONDITIONS AGGRAVATED BY USE - Unknown

EMERGENCY AND FIRST AID PROCEDURES - EYES: In case of contact, immediately flush eyes with water for at least 15 minutes. If irritation persists, call a physician.

SECTION VI: REACTIVITY DATA

STABILITY: STABLE ☒

INCOMPATIBILITY (MATERIALS TO AVOID)

None known

HAZARDOUS DECOMPOSITION PRODUCTS

None known

HAZARDOUS POLYMERIZATION: WILL NOT OCCUR ☒

SECTION VII: SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED

Pick up excess with absorbent material and discard properly. Flush surface with water.

WASTE DISPOSAL METHOD

Do not incinerate or puncture aerosol container. Dispose of in accordance with state, local or Federal regulations.

SECTION VIII: SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION (SPECIFY TYPE) - None required

VENTILATION - Good general ventilation should be sufficient for most conditions. Local exhaust ventilation may be necessary for some operations.

PROTECTIVE GLOVES (SPECIFY TYPE)

Not required

EYE PROTECTION (SPECIFY TYPE)

Not required

OTHER PROTECTIVE EQUIPMENT

None required

SECTION IX: SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING

Contents under pressure. Do not use near fire, sparks or flame. Do not store where temperatures could exceed 120°F.

OTHER PRECAUTIONS

None

Spartan Chemical Co., Inc.
PREMIUM WOOD POLISH (AEROSOL)
Ref: 29 CFR 1910.1200 (OSHA)

NAME	Thomas J. Mitchell
TITLE	Director of Research
DATE	December 21, 1992
SUPERCEDES	June 1, 1990

Health	1
Flammability	4
Reactivity	0

MATERIAL SAFETY DATA SHEET

(Complies with OSHA Communication Standard 29 CFR 1910.1200 Dept. of Labor)
Form approved OMB No. 1218-0072
OSHA 174 - Sept 1985

Health	3
Flammability	4
Reactivity	1

IDENTITY:

Food Grade Silicone
TM-3454
#76194

Marketer's Name Must Appear Below

DOT Shipping - Consumer Commodity ORM-D

Manufacturer's Name	Osborn Manufacturing	Emergency Telephone Number	(216) 467-4195
Address	5401 Hamilton Ave.	Telephone Number for Information	(216) 361-1900
	Cleveland, OH 44114-3997	Date Prepared	7/9/90
		Checked	✓

Section II - Hazardous Ingredients/Identity Information

Hazardous Components (Specific Chemical Identity, Common Names(s))	OSHA PEL	ACGIH TLV	STEL	% (optional)
*1,1,1 Trichloroethane (71-55-6)	350	350	450	75
Propane/Isobutane /n-Butane (74-98-6)	1000	1000	Asphyxiant	20
Non-Hazardous	-	-	-	5

All chemical compounds marked with an Asterisk () are toxic chemicals subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act (SARA) of 1986 and 40 CFR Part 372. You must notify each person to whom this mixture or trade name product is sold. This statement must remain a part of this Material Safety Data Sheet.

Section III - Physical/Chemical Characteristics

Boiling Point	Range	-40°F TO 191°F	Specific Gravity (H ₂ O = 1)	1.0
Vapor Pressure PSIG @ 70°F		ND	Melting Point	NA
Vapor Density (AIR = 1)	Heavier than Air	4.0	Evaporation Rate (Butyl Acetate = 1)	>1
Solubility in Water	Nil		Appearance and Odor	Clear/solvent Odor

Section IV - Fire and Explosion Hazard Data

Flash Point (Method Used)	Flammable Limits	LEL	UEL
-40°F T.C.C.		1.8	12.0

Extinguishing Media Use water fog, dry chemical or carbon dioxide

Initial Fire Fighting Procedures

Aerosol cans may rupture when heated

Unusual Fire and Explosion Hazards

Heated cans may burst

Stability	Unstable		Conditions to Avoid
	Stable	X	High Temperatures

Stability (Materials to Avoid) Not compatible with active metals.

The above solvents are incompatible with strong oxidizers.

Hazardous Decomposition or Byproducts

In fire will decompose to water, carbon dioxide, halogen acids and phosgene.

Hazardous Polymerization	May Occur		Conditions to Avoid
	Will not Occur	X	None

Section VI - Health Hazard Data

Route(s) of Entry:	Inhalation?	Skin?	Ingestion?
	Yes	Yes	Yes

Health Hazards (Acute and Chronic)

May cause dizziness or narcosis in high vapor concentrations. Will cause defatting of skin. Effects are reversible.

Long term exposure (years) to high concentrations of vapor may cause lung, liver or kidney damage. The solvents

listed have been reported to affect the central nervous system.

Carcinogenicity:	NTP?	IARC Monographs?	OSHA Regulated?
	Presently not on any list.		

Signs and Symptoms of Exposure

Inhalation - Difficulty in breathing. Skin-redness. Ingestion-vomiting.

Medical Conditions

Generally Aggravated by Exposure: Heart Disease; Respiratory Disorders.

Emergency and First Aid Procedures

Give oxygen - Do not induce vomiting - Gastric lavage - Wash eyes and skin with water.

Section VII - Precautions for Safe Handling and Use

Steps to be Taken in Case Material is Released or Spilled:

Use absorbent sweeping compound to soak up material. Put into container. Dispose as hazardous waste.

Waste Disposal Method

Dispose as hazardous waste in accordance with EPA RCRA.

Precautions to be Taken in Handling and Storing

Keep away from heat, sparks, or open flame. Store at temperatures below 120°F.

Other Precautions When spraying more than one half can continuously or more than one can consecutively, use NIOSH approved respirator.

Section VIII - Control Measures

Respiratory Protection (Specify Type)

Self contained breathing apparatus if above TLV limit exceeding.

Ventilation	Local Exhaust	Special
	Yes	None
	Mechanical (General)	Other
	None	None

Protective Gloves

None required if spraying

Eye Protection

Wear eye protection

Other Protective Clothing or Equipment

Long sleeve and long pants

Additional Precautions: Do not smoke while using. Wash hands after use.

Storeroom Inventory

STOREROOM PART MASTER INQUIRY

PART NO	89116		
DESCRIPTION	ADHESIVE, SUPER #77 3M SPRAY GLUE		
QU ON HAND	48		/ ROLL WRAP
QU @ NO COST			
QU ON ORDER			RECEIVED
MAX QU	48	MTD QU	0
MIN QU	24	MTD \$	.00
UNITS	EACH	YTD QU	132
LOCATION	32.4.7	YTD \$	926.88
AVG COST/UNIT	7.27		
DELIVERY DATE			
LEAD TIME	ENTRY 1070		USED
LAST ORDER		MTD QU	0
DATE	5/10/00	MTD \$	.00
ORDER NO	D5154	YTD QU	119
VENDOR	MARSHALL E. CAMPBELL	YTD \$	818.72
LAST RECEIVED	5/11/00		
		PREV. YEAR USAGE	220
MENTS			
COMMENTS	REPLACES TAG 89132		

CMD 2 TO RETURN, CMD 3 FOR NEXT PAGE

STOREROOM PART MASTER INQUIRY

PART NO	88413		
DESCRIPTION	TEKUSOLVE, SPRAY DEGREASER #5495		
QU ON HAND	43		RECEIVED
QU @ NO COST			
QU ON ORDER		MTD QU	60
MAX QU	60	MTD \$	652.50
MIN QU	36	YTD QU	420
UNITS	EACH	YTD \$	4,417.50
LOCATION	31.1.2		
AVG COST/UNIT	10.88		USED
DELIVERY DATE		MTD QU	30
LEAD TIME		MTD \$	313.80
LAST ORDER		YTD QU	389
DATE	5/23/00	YTD \$	4,068.94
ORDER NO	041157		
VENDOR	CERTIFIED LABORATORI	PREV. YEAR USAGE	486
LA RECEIVED	6/01/00		
COMMENTS			
COMMENTS	48 IS PRICE BREAK		

CMD 2 TO RETURN, CMD 3 FOR NEXT PAGE

STOREROOM PART MASTER INQUIRY

Chain & wire Rope Lube

PART NO	88401		
DESCRIPTION	LUBRICANT, OSBORN OPEN GEAR #76200/MOBILTAC-E (#03050 CRC)		
QU ON HAND	4		
QU @ NO COST		RECEIVED	
QU ON ORDER		MTD QU	0
MAX QU	12	MTD \$	.00
MIN QU	4	YTD QU	0
UNITS		YTD \$	.00
LOCATION	32.1.2		
AVG COST/UNIT	5.28	USED	
DELIVERY DATE		MTD QU	0
LEAD TIME		MTD \$	.00
LAST ORDER		YTD QU	4
DATE	10/29/98	YTD \$	21.12
ORDER NO	C08312		
VENDOR	MARSHALL E. CAMPBELL	PREV. YEAR USAGE	1-
LAST RECEIVED	10/30/98		

COMMENTS
MENTS

CMD 2 TO RETURN, CMD 3 FOR NEXT PAGE

STOREROOM PART MASTER INQUIRY

PART NO	88406		
DESCRIPTION	CUTTING OIL, OSBORN #76203 (#14050 CRC)		
QU ON HAND	8		
QU @ NO COST		RECEIVED	
QU ON ORDER		MTD QU	0
MAX QU	12	MTD \$	.00
MIN QU	6	YTD QU	0
UNITS		YTD \$	.00
LOCATION	32.1.1		
AVG COST/UNIT	4.71	USED	
DELIVERY DATE		MTD QU	0
LEAD TIME		MTD \$	.00
LAST ORDER		YTD QU	8
DATE	4/02/98	YTD \$	37.68
ORDER NO	C05954		
VENDOR	MARSHALL E. CAMPBELL	PREV. YEAR USAGE	12
LAST RECEIVED	4/03/98		

COMMENTS
MENTS

CMD 2 TO RETURN, CMD 3 FOR NEXT PAGE

STOREROOM PART MASTER INQUIRY

PART NO	88402		
DESCRIPTION	SPRAY GREASE, WHITE LITHIUM (#03080 CRC)		
QU ON HAND	15		
QU @ NO COST			
QU ON ORDER		RECEIVED	
MAX QU	12	MTD QU	0
MIN QU	4	MTD \$	.00
UNITS		YTD QU	24
LOCATION	32.1.1	YTD \$	115.08
AVG COST/UNIT	4.90		
DELIVERY DATE		USED	
LEAD TIME		MTD QU	0
LAST ORDER		MTD \$	.00
DATE	5/18/00	YTD QU	19
ORDER NO	D5241	YTD \$	87.55
VENDOR	MARSHALL E. CAMPBELL		
LAST RECEIVED	5/19/00	PREV. YEAR USAGE	35
COMMENTS			
COMMENTS			

CMD 2 TO RETURN, CMD 3 FOR NEXT PAGE

STOREROOM PART MASTER INQUIRY

PART NO	88394		
DESCRIPTION	NEVER-SEEZ, ANTI SIEZE SPRAY NICKLE #NSN-16A		
QU ON HAND	4		
QU @ NO COST			
QU ON ORDER	3	RECEIVED	
MAX QU	8	MTD QU	0
MIN QU	4	MTD \$	.00
UNITS		YTD QU	8
LOCATION	32.2.3	YTD \$	135.84
AVG COST/UNIT	16.98		
DELIVERY DATE	6-13-00	USED	
LEAD TIME		MTD QU	3
LAST ORDER		MTD \$	50.94
DATE	6/06/00	YTD QU	10
ORDER NO	D5506	YTD \$	169.80
VENDOR	MARSHALL E. CAMPBELL		
LAST RECEIVED	6/07/00	PREV. YEAR USAGE	12
COMMENTS			
COMMENTS			

ID 2 TO RETURN CMD 3 FOR NEXT PAGE CMD 7 NEXT PART CMD 8 PRIOR PART

STOREROOM PART MASTER INQUIRY

PART NO	85711		
DESCRIPTION	SPRAY PAINT, BROMA #104, BLACK		
QU ON HAND	4		
QU @ NO COST			RECEIVED
QU ON ORDER		MTD QU	0
MAX QU	12	MTD \$	.00
MIN QU	4	YTD QU	24
UNITS		YTD \$	49.20
LOCATION	32.4.2		
AVG COST/UNIT	2.05		USED
DELIVERY DATE		MTD QU	2
LEAD TIME		MTD \$	4.10
LAST ORDER		YTD QU	29
DATE	5/04/00	YTD \$	59.45
ORDER NO	D2546		
VENDOR	PORT HURON PAINT	PREV. YEAR USAGE	42
LAST RECEIVED	5/05/00		
COMMENTS			
COMMENTS			

CMD 2 TO RETURN, CMD 3 FOR NEXT PAGE

STOREROOM PART MASTER INQUIRY

PART NO	85712		
DESCRIPTION	SPRAY PAINT, BROMA #105, RED		
QU ON HAND	15		
@ NO COST			RECEIVED
QU ON ORDER		MTD QU	0
MAX QU	12	MTD \$	.00
MIN QU	6	YTD QU	12
UNITS		YTD \$	24.60
LOCATION	32.3.2		
AVG COST/UNIT	1.75		USED
DELIVERY DATE		MTD QU	2
LEAD TIME		MTD \$	3.50
LAST ORDER		YTD QU	11
DATE	5/22/00	YTD \$	12.77
ORDER NO	D5337		
VENDOR	PORT HURON PAINT	PREV. YEAR USAGE	15
LAST RECEIVED	5/22/00		
COMMENTS			
COMMENTS			

CMD 2 TO RETURN, CMD 3 FOR NEXT PAGE

STOREROOM PART MASTER INQUIRY

PART NO	85714		
DESCRIPTION	SPRAY PAINT, BROMA #107, DOVE GRAY		
QU ON HAND	21		
QU @ NO COST		RECEIVED	
ON ORDER		MTD QU	0
X QU	24	MTD \$	.00
MIN QU	6	YTD QU	12
UNITS		YTD \$	24.60
LOCATION	32.4.3		
AVG COST/UNIT	2.04	USED	
DELIVERY DATE		MTD QU	1
LEAD TIME		MTD \$	2.04
LAST ORDER		YTD QU	9
DATE	5/04/00	YTD \$	18.22
ORDER NO	D2546		
VENDOR	PORT HURON PAINT	PREV. YEAR USAGE	32
LAST RECEIVED	5/05/00		
COMMENTS			
COMMENTS			

CMD 2 TO RETURN, CMD 3 FOR NEXT PAGE

STOREROOM PART MASTER INQUIRY

PART NO	85713		
DESCRIPTION	SPRAY PAINT, BROMA #106, BLUE		
QU ON HAND	15		
QU @ NO COST		RECEIVED	
ON ORDER		MTD QU	18
X QU	18	MTD \$	36.90
MIN QU	12	YTD QU	42
UNITS		YTD \$	86.10
LOCATION	32.3.2		
AVG COST/UNIT	2.05	USED	
DELIVERY DATE		MTD QU	15
LEAD TIME		MTD \$	30.75
LAST ORDER		YTD QU	69
DATE	6/05/00	YTD \$	141.45
ORDER NO	D5489		
VENDOR	PORT HURON PAINT	PREV. YEAR USAGE	122
LAST RECEIVED	6/08/00		
COMMENTS			
COMMENTS			

CMD 2 TO RETURN, CMD 3 FOR NEXT PAGE

STOREROOM PART MASTER INQUIRY

PART NO	85719			
DESCRIPTION	SPRAY PAINT, BROMA #103 GLOSS WHITE			
QU ON HAND	11			
QU @ NO COST			RECEIVED	
QU ON ORDER		MTD QU		0
X QU	12	MTD \$		.00
LN QU	4	YTD QU		6
UNITS		YTD \$		12.30
LOCATION	32.4.3		USED	
AVG COST/UNIT	2.03			
DELIVERY DATE		MTD QU		0
LEAD TIME		MTD \$		.00
LAST ORDER		YTD QU		8
DATE	5/04/00	YTD \$		16.00
ORDER NO	D2546			
VENDOR	PORT HURON PAINT		PREV. YEAR USAGE	19
LAST RECEIVED	5/05/00			
COMMENTS				
COMMENTS				

CMD 2 TO RETURN, CMD 3 FOR NEXT PAGE

STOREROOM PART MASTER INQUIRY

PART NO	85715			
DESCRIPTION	SPRAY PAINT, BROMA #108, GREEN			
QU ON HAND	8			
QU @ NO COST			RECEIVED	
QU ON ORDER		MTD QU		0
MAX QU	6	MTD \$		.00
J QU	2	YTD QU		6
UNITS		YTD \$		12.30
LOCATION	32.3.4		USED	
AVG COST/UNIT	2.05			
DELIVERY DATE		MTD QU		0
LEAD TIME		MTD \$		.00
LAST ORDER		YTD QU		6
DATE	5/04/00	YTD \$		12.30
ORDER NO	D2546			
VENDOR	PORT HURON PAINT		PREV. YEAR USAGE	19
LAST RECEIVED	5/05/00			
COMMENTS				
COMMENTS				

CMD 2 TO RETURN, CMD 3 FOR NEXT PAGE

STOREROOM PART MASTER INQUIRY

PART NO	85722		
DESCRIPTION	SPRAY PAINT, BROMA #126, ORANGE		
QU ON HAND	5		
QU @ NO COST		RECEIVED	
QU ON ORDER		MTD QU	0
MAX QU	6	MTD \$	.00
MIN QU	3	YTD QU	0
UNITS		YTD \$	.00
LOCATION	32.3.3		
AVG COST/UNIT	2.05	USED	
DELIVERY DATE		MTD QU	0
LEAD TIME		MTD \$	.00
LAST ORDER		YTD QU	2
DATE	10/19/99	YTD \$	4.10
ORDER NO	D0091		
VENDOR	PORT HURON PAINT	PREV. YEAR USAGE	11
LAST RECEIVED	11/11/99		
COMMENTS			
COMMENTS			

CMD 2 TO RETURN, CMD 3 FOR NEXT PAGE

STOREROOM PART MASTER INQUIRY

PART NO	85721		
DESCRIPTION	SPRAY PAINT, BROMA #125, BROWN		
QU ON HAND	3		
QU @ NO COST		RECEIVED	
QU ON ORDER		MTD QU	0
MAX QU	6	MTD \$	.00
MIN QU	2	YTD QU	6
UNITS		YTD \$	12.30
LOCATION	32.3.3		
AVG COST/UNIT	2.02	USED	
DELIVERY DATE		MTD QU	1
LEAD TIME		MTD \$	2.02
LAST ORDER		YTD QU	4
DATE	1/01/00	YTD \$	8.08
ORDER NO	D1096		
VENDOR	PORT HURON PAINT	PREV. YEAR USAGE	9
LAST RECEIVED	1/05/00		
COMMENTS			
COMMENTS			

CMD 2 TO RETURN, CMD 3 FOR NEXT PAGE

STOREROOM PART MASTER INQUIRY

PART NO	85717		
DESCRIPTION	SPRAY PAINT, TRAFFIC MARKING GREEN	TN1	
QU ON HAND	6		
QU @ NO COST			
ON ORDER			
QU			
MIN QU			
UNITS	EACH		
LOCATION	32.4.5		
AVG COST/UNIT	3.53		
DELIVERY DATE			
LEAD TIME	ENTRY 1717		
LAST ORDER			
DATE	2/11/97		
ORDER NO	028187		
VENDOR	FOX VALLEY MARKING S		
LAST RECEIVED	2/20/97		
COMMENTS	HAND OPERATED SPRAY CANS		
COMMENTS			

RECEIVED

MTD QU	0
MTD \$	.00
YTD QU	0
YTD \$	.00

USED

MTD QU	0
MTD \$	.00
YTD QU	12
YTD \$	42.36

PREV. YEAR USAGE	12
------------------	----

CMD 2 TO RETURN, CMD 3 FOR NEXT PAGE

STOREROOM PART MASTER INQUIRY

PART NO	85716		
DESCRIPTION	SPRAY PAINT, TRAFFIC MARKING YELLOW	#STY1 SUPER SUPREME	
QU ON HAND	107		
QU @ NO COST			
ON ORDER			
K QU	24		
MIN QU	12		
UNITS	EACH		
LOCATION	32.4.5		
AVG COST/UNIT	4.82		
DELIVERY DATE			
LEAD TIME	ENTRY 1131		
LAST ORDER			
DATE	9/30/99		
ORDER NO	038404		
VENDOR	FOX VALLEY MARKING S		
LAST RECEIVED	10/11/99		
COMMENTS			
COMMENTS			

RECEIVED

MTD QU	0
MTD \$	.00
YTD QU	0
YTD \$	.00

USED

MTD QU	0
MTD \$	.00
YTD QU	12
YTD \$	57.84

PREV. YEAR USAGE	46
------------------	----

CMD 2 TO RETURN, CMD 3 FOR NEXT PAGE

STOREROOM PART MASTER INQUIRY

PART NO	85710		
DESCRIPTION	SPRAY PAINT. BROMA #100 ALUMINUM		
QU ON HAND	9		
QU @ NO COST			
ON ORDER		RECEIVED	
QU	12	MTD QU	0
MIN QU	4	MTD \$	.00
UNITS		YTD QU	6
LOCATION	32.4.2	YTD \$	12.30
AVG COST/UNIT	2.04		
DELIVERY DATE		USED	
LEAD TIME		MTD QU	0
LAST ORDER		MTD \$	.00
DATE	1/01/00	YTD QU	4
ORDER NO	D1096	YTD \$	8.16
VENDOR	PORT HURON PAINT		
LAST RECEIVED	1/05/00	PREV. YEAR USAGE	36
COMMENTS			
COMMENTS			

CMD 2 TO RETURN, CMD 3 FOR NEXT PAGE

STOREROOM PART MASTER INQUIRY

PART NO	88399		
DESCRIPTION	SILICONE, OSBORN FOOD GRADE #76194 (#03040 CRC)		
QU ON HAND	11		
QU @ NO COST			
QU ON ORDER		RECEIVED	
MAX QU	24	MTD QU	0
MIN QU	8	MTD \$	.00
UNITS		YTD QU	24
LOCATION	32.1.6	YTD \$	94.80
AVG COST/UNIT	3.95		
DELIVERY DATE		USED	
LEAD TIME		MTD QU	0
LAST ORDER		MTD \$	.00
DATE	3/08/00	YTD QU	37
ORDER NO	D1893	YTD \$	145.69
VENDOR	MARSHALL E. CAMPBELL		
LAST RECEIVED	3/09/00	PREV. YEAR USAGE	86
COMMENTS			
COMMENTS			

CMD 2 TO RETURN, CMD 3 FOR NEXT PAGE

MSDS's

Propylene

Mobil Secor &

DATE: 1-15-96 (X) NEW () REVISED
5-94

JAN 11 '96 10:33 FR PETRO CANADA S.
01/10/96 WED 16:31 FAX 810 364 4712

(X) TECHNICAL () POWER PLANT
(X) WWTP (X) STORES
() LAB (X) #5/6 OFFICE
(X) ROLL WRAP (X) #7 OFFICE
(X) MAINTENANCE (X) #8 OFFICE
(X) MATERIAL PREP

32/03

4002

Material Safety Data Sheet

May be used to comply with
OSHA's Hazard Communication Standard,
29 CFR 1910.1200. Standard must be
consulted for specific requirements.

U.S. Department of Labor

Occupational Safety and Health Administration
(Non-Mandatory Form)

Form Approved

OMB No. 1218-0072



IDENTITY (As Used on Label and List)

PROPANE (a liquidified petroleum gas)

Note: Blank spaces are not permitted. If any item is not applicable, or no information is available, the space must be marked to indicate that.

Section I

Manufacturer's Name

St. Clair Underground Storage

Address (Number, Street, City, State, and ZIP Code)

2510 Busha Highway

Marysville, MI 48040

Emergency Telephone Number

810-364-8100

Telephone Number for Information

810-364-8100

Date Prepared

May 18, 1994

Signature of Preparer (optional)

Section II — Hazardous Ingredients/Identity Information

Hazardous Components (Specific Chemical Identity; Common Name(s))	OSHA PEL	ACGIH TLV	Other Limits Recommended	% (optional)
CAS#				
Propane 74986		1000 ppm		95+% (liq vol)
Ethane 74840	none (a simple asphyxiant)			3%
Isobutane 75285	none listed			1%
Propylene 115071		1000 ppm		1%

Composition listed is approximate, but typical.

Ethanethiol (Ethyl Mercaptan) CAS# 75081 is added at concentrations of at least 1.5 lbs per 10,000 gallons as the use of the propane requires.

Section III — Physical/Chemical Characteristics

Boiling Point	<u>-50°</u>	Specific Gravity (H ₂ O = 1) Compressed to Liquid	<u>0.503</u>
Vapor Pressure (mm Hg.) psig @ 100°F	<u>190-208</u>	Melting Point	<u>-306°F</u>
Vapor Density (AIR = 1)	<u>1.5</u>	Evaporation Rate (Butyl Acetate = 1) A gas at normal temp. and pressure.	

Solubility in Water

6.5 cc per 100 gms water at 64°F

Appearance and Odor Colorless gas; colorless, clear in liquid state; no significant odor unless specifically odorized to give typical "gas leak" odor.

Section IV — Fire and Explosion Hazard Data

Flash Point (Method Used)	<u>-156°F</u>	Flammable Limits Vol % in air	LEL <u>2.1%</u>	UEL <u>9.5%</u>
---------------------------	---------------	----------------------------------	--------------------	--------------------

Extinguishing Media

Small fires: dry chemical or CO₂. Large fires: water spray fog or foam.

Special Fire Fighting Procedures

Let tank car, tank truck or storage tank burn unless leak can be stopped. With smaller tank or cylinders, extinguish/isolate from other flammables. When burning there is a danger of violent explosion as liquid in tank nears dryness.

Unusual Fire and Explosion Hazards

Extremely flammable; may be ignited by heat, sparks or flames.

Vapors may travel to source of ignition and flash back. Container may explode in heat

of fire. Vapor explosion hazard indoors, outdoors or in sewers.

Propane

Section V — Reactivity Data

Stability	Unstable	Conditions to Avoid
	Stable	Heat, sparks or flames. Extremely flammable.
		X

Incompatibility (Materials to Avoid)

Flame, ClO₂, oxidizing materials

Hazardous Decomposition or Byproducts

N/A

Hazardous Polymerization:	May Occur	Conditions to Avoid
	Will Not Occur	N/A
		X

Section VI — Health Hazard Data

Route(s) of Entry:	Inhalation?	Skin?	Ingestion?
Primarily inhalation of vapors.			
Health Hazards (Acute and Chronic)	Vapors may cause dizziness or suffocation. Contact with evaporating liquid will cause severe frostbite. Fire may produce irritating or poisonous gases.		

Carcinogenicity:	NTP?	IARC Monographs?	OSHA Regulated?
None			

High concentrations have a central nervous system effect.

Signs and Symptoms of Exposure

Drowsiness, dizziness; an asphyxiant.

Medical Conditions

Generally Aggravated by Exposure

N/A

Emergency and First Aid Procedures Move victim to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call emergency medical care.

Keep victim quiet and maintain normal body temperature.

Section VII — Precautions for Safe Handling and Use

Steps to Be Taken in Case Material is Released or Spilled

Shut off ignition sources: no flares, smoking or flames in hazard area. Do not touch spilled material. Stop leak if you can do it without risk. Isolate area and deny entry until gas has dispersed; if tank car or truck is involved, isolate 1/2-mile radius.

Waste Disposal Method

For very small amounts: controlled venting in outside air. For large amount: controlled burning in governmental air-pollution-control agency permitted facilities.

Precautions to Be Taken in Handling and Storing

Observe specific handling and safety precautions. Store away from sources of heat, sparks and flame. Store in extremely well-ventilated area or outdoors.

Other Precautions

Ventilate closed area which may contain vapors before entering them. Be aware that vapors may collect in low areas. On occasions odorized propane gas may lose its distinctive odor.

Section VIII — Control Measures

Respiratory Protection (Specify Type)

If exposure is necessary during emergency wear self-contained breathing apparatus.

Ventilation	Local Exhaust	Special
	Explosion-proof fans	N/A
	Mechanical (General)	Other
	N/A	N/A

Protective Gloves	Wear gloves to protect hands from valve leaks which can cause frostbite.	Eye Protection	Safety glasses or goggles.
-------------------	--	----------------	----------------------------

Other Protective Clothing or Equipment

N/A

Work Hygienic Practices

Avoid routine inhalation exposure.